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ABSTRACT

The purpose of the study was to investigate the relationship between the physical, social, and psychological variables of the family environment and children's developmental performance on measures of cognition, academic achievement, and affective characteristics. A sample of 69 families was administered a multicomponent family assessment instrument designed to measure family process variables related to the quality of the language-learning environment, the quality of the social-emotional environment, the family's sociodemographic characteristics, health status, stability, and the quality of the physical home environment. A sample of 182 children from these families was administered a set of performance measures assessing cognitive functioning, academic achievement, and affective development. A series of multivariate analyses revealed that families could be differentiated into two distinctly different groups (high- and low-risk). School-age children from high-risk families performed significantly below children from low-risk families across performance measures. Further examination indicated that family risk variables combined in significantly different ways to predict cognitive functioning and achievement grade discrepancy scores for younger as compared to older children. Part II contains 15 appendixes whose principal topics include the following: (1) psychometric characteristics of selected family assessment instruments; (2) family interview schedule booklet; (3) parent answer booklet; (4) post-observation form, scoring instructions, and scoring sheet; and (5) psychometric characteristics of selected child assessment instruments. (Author/CL)

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FINAL REPORT

PART I

DIFFERENTIATING PSYCHOSOCIAL RISK AS A MEANS OF INDIVIDUALIZING PROGRAMS FOR HANDICAPPED CHILDREN AND THEIR FAMILIES

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FINAL REPORT

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THE RELATIONSHIP BETWEEN FAMILY VARIABLES AND CHILDREN'S DEVELOPMENTAL PERFORMANCE

by

Pamela S. Maykut
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THE RELATIONSHIP BETWEEN FAMILY VARIABLES AND CHILDREN'S DEVELOPMENTAL PERFORMANCE

by

PAMELA S. MAYKUT

A thesis submitted in partial fulfillment of the
requirements for the degree of

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1983

ABSTRACT

THE RELATIONSHIP BETWEEN FAMILY VARIABLES AND CHILDREN'S DEVELOPMENTAL PERFORMANCE

Pamela S. Maykut

Under the supervision of Professor William I. Gardner

The purpose of this study was to investigate the relationship between the physical, social, and psychological variables of the family environment and children's developmental performance on measures of cognition, academic achievement, and affective characteristics. Family environments were characterized as either high- or low-risk based on their composite score on a subset of status/situational and process variables that suggested an increased likelihood of learning and behavior problems in children. A sample of 69 families was administered a multicomponent family assessment instrument designed to measure family process variables related to the quality of the language-learning environment and the quality of the social-emotional environment. The family assessment also included interview questions regarding the family's sociodemographic characteristics, health status, stability, and the quality of the physical home environment. A sample of 182 children from these families was administered a set of performance measures assessing cognitive functioning, academic achievement, and affective development.

A series of multivariate analyses revealed that families could be differentiated into two distinctly different groups (high- and low-risk) using a statistically derived composite of both status/situational and process variables. The validity of the composite of family risk variables was supported by the finding that school-age children from high-risk families performed significantly below children from low-risk families across performance measures. Further examination (regardless of risk group) indicated that family risk variables combined in significantly different ways to predict cognitive functioning and achievement grade discrepancy scores for younger as compared to older children.

A preliminary model relating family setting and processes to children's developmental performance was presented. The differential relationship between family variables and children's performance as a function of age suggested the continuous and changing role of the family environment in promoting or impeding children's school-relevant skill attainment.

William I. Gardner

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Chapter I

INTRODUCTION

In American society, school is the only major legitimate activity for children between 6 and 18 years of age. If a child fails at school, there is little else at which he can be successful. Sabatino and Hayden (1970) suggest that about 20% of first graders fail each year. Nationally, 20% to 30% of the children and young adults between 9 and 35 years of age cannot satisfactorily complete various fundamental reading tasks. Further, it is estimated that seven million people under 16 years of age will become functionally illiterate adults (National Assessment of Educational Progress, 1973). The number of children receiving remedial and special education services and the amount of money budgeted for these services are both steadily increasing (Brewer & Kakalik, 1979; Meier, 1976). Although schools have proved themselves capable of implementing technically adequate intervention strategies, the benefits for children have been far fewer than expected (Glidman & Roth, 1980; MacMillan, 1977). While there is support for the benefits of well-planned intervention for children with profound handicaps (Tjossem, 1976), the research concerning programs for children with etiologically more uncertain handicaps -- the educable mentally retarded, mildly emotionally disturbed, and learning disabled -- has yielded less satisfactory results (Kirp, 1974).

Methodological weaknesses of many of the efficacy studies, such as selective bias in the formation of groups and the confounding of uncontrolled variables, suggest reason for caution in interpreting results (MacMillan, 1977). Nonetheless, a myriad of educational intervention strategies and techniques undertaken with thousands of children have yielded equivocal results in terms of both human and economic benefits and costs. The role of the family in accounting for these results has not been fully explored.

A major premise of the proposed study is that the effectiveness of any educational intervention is dependent upon the family's ability to support and extend the intervention into the home. To the extent that the family is unable to support the educational intervention, the effectiveness of the intervention is increasingly compromised. The home environment remains the principal setting in which a child's social and cognitive development takes place. This environment as mediated by parents (Feuerstein, 1980) is essentially an educational process that pervades through the child's school years. Parents who are unable to successfully participate, support, and extend the school's educational process or whose in-home educational process is antagonistic to that of the school's may compromise program effectiveness. As a result, benefits of both regular and special educational services may be seriously diminished.

If the major educational problems of children are to be addressed, it will be necessary to understand the most salient features of the child's family environment. Contemporary research interest into the problems of development and the possibilities of preventing or minimizing childhood learning and behavior disorders has revealed no simple solutions. Rather, the etiology of childhood disorders becomes more complex as multiple and interrelated influences are identified. A review of family factors implicated in the etiology of several forms of disadvantage and disability shows that there are many different factors (e.g., family dysfunction, poverty, crowding) and associated outcomes (e.g., emotional disturbance, impaired cognitive functioning, antisocial behavior), but the relationships among these variables are relatively undifferentiated. As Bloom (1964) and MacMillan (1977) have indicated in their discussions of of environmental variables, the search for meaningful relationships between environmental factors and child outcomes should (a) try to determine which specific environmental characteristics are related to the children's subaverage intellectual functioning and impaired adaptive behavior; and (b) aim for greater precision in specifying important environmental features within general sociodemographic groupings, such as social class, that are associated with problems of development.

The importance of examining critical family environmental variables as they relate to child development is further underscored when viewed in light of the cycling of developmental problems or "intergenerational transmission of social pathology," as described by Hess (1970) and supported by an extensive review of the subject by Rutter and Madge (1976). Noteworthy among their findings are strong intergenerational continuities for quality of housing, intellectual level, reading difficulties, speech and language delay, educational attainment, occupational status, delinquency and criminality, psychiatric disorders, and parenting behavior. Thus, families with multiple social disadvantages and/or personal problems constitute a cause for concern not only in terms of current suffering but also in terms of problems that persist into the next generation. Although, even in the most disadvantaged families, some children develop quite normally, the rate of educational, psychiatric, occupational, and family problems is well above national averages (Rutter & Madge, 1976).

The relationship between various family environmental variables and children's developmental outcomes has not gone unrecognized by the educational community. Since the 1960s the importance of various family and home environment variables has been examined with respect to children's school achievement. Focus on the importance of the early years in setting the pace and direction of cognitive growth led to the development of the home-based early compensatory education programs. The critical mediating role of the family was featured in the comprehensive review of early intervention studies by

Bronfenbrenner (1974). He concluded that active parent involvement was essential to the success of an early intervention program and suggested that it was the "less-disadvantaged" poor families (i.e., those closest to middle class norms) who were most likely to appropriately respond to intervention efforts directly involving parents. The observation that not all parents respond to parent-mediated interventions with the [illegible] amount of learning or systematic application of newly acquired skills is supported by other researchers (Anchor & Thorason, 1977; Baker & Heifetz, 1976; Clarke & Clarke, 1977; Goodson & Hess, 1975). Differences in children's cognitive development as a result of early intervention have been shown to be associated with identifiable family variables, such as the level of maternal intellectual functioning and the quality of the home environment (Garber & Heber, 1982a).

Some effort to increase the effectiveness of special education services through parent involvement has been offered in Public Law 94-142, the Education for All Handicapped Children Act. PL 94-142 assigns to the school the responsibility to provide all necessary supportive services to handicapped children "as are required to assist a handicapped child to benefit from special education" (Federal Register, 8-23-77, p. 42479). More specifically, supportive services include a number of services that emphasize the importance of active parent involvement in the special education programs that extends well beyond the usual modes of involvement. "Related services" to handicapped children include the following, as outlined in "Implementation of Part B of the Education of the Handicapped Act" (Federal Register, 8-23-77, p. 42470, 121a.13):

1. Parent counseling and training: Assisting parents in understanding the special needs of their child and providing parents with information about child development.

2. Obtaining, integrating, and interpreting information about child behavior and conditions related to learning.

3. Planning and managing a program of psychological services, including psychological counseling for children and parents.

4. Group and individual counseling with the child and family.

5. Working with those problems in a child's living situation (home, school, and community) that affect the child's adjustment in school.

6. Mobilizing school and community resources to enable the child to receive maximum benefit from his or her educational program.

Thus, involving parents in the delivery of services to handicapped children is a legal mandate and, based on a number of reviews, a necessary component for ensuring the success of educational intervention programs (Bronfenbrenner, 1974; Goodson & Hess, 1975; Kroth, 1978; Stedman, 1977; Vincent, Dodd, & Henner, 1978). However, the needs and capabilities of the family to support their handicapped child's educational program, as described in PL 94-142, are not typically assessed. Review of the list of "related services" suggests a range of services from counseling to training, and a variety of settings including home and community, that need to be systematically assessed to develop an effective intervention program. Currently, many roles in the parent-professional relationship, such as assisting in the development of a child's "Individual Educational Plan," participating in school-based parent groups, and child advocacy, are inappropriate and inadequate forms of involvement for families who cannot provide the necessary supports for effective child development. In fact, the Bureau of Education for the Handicapped reports that many parents do not have the skills needed to participate effectively in planning their child's educational program (Division of Assistance to States, BEH, August, 1979). This situation is summarized by Gliedman and Roth (1980): "More is needed to make service delivery genuinely parent-centered than formal provision for parental participation in the review process and an attitude of genuine concern on the part of the professionals" (p. 155).

Taken together, there is considerable support for the importance of critical family environmental variables in the development of children's school-relevant skills, and for the importance of family variables in the success of educational interventions. Presently, the interrelationship among these critical family environmental variables and children's developmental performance is essentially unknown. The purpose of this study, therefore, is to investigate the relationship between the physical, social, and psychological variables of the family environment and children's developmental performance on measures of cognition, academic achievement, and affective development. To conduct this investigation, a multicomponent family assessment protocol was developed and administered to a sample of families having one or more children in remedial or special education programs. Children with remedial or special needs and their siblings, ranging in age from 4 to 19 years, were administered a battery of cognitive, academic, and affective measures. A sequence of multivariate analyses were conducted to examine family environment-child performance relationships for children of different ages.

In the chapter that follows, major investigations of family environment-child performance relationships will be presented. The literature review will focus primarily on descriptive and experimental studies of the family environmental variables that have contributed to an understanding of the relationship between the family environment and the development of children's learning and behavior problems. From this discussion the concept of "at-risk" family environments will be developed. In the present study, "risk" refers to family environmental process and status/situational variables that suggest an increased likelihood of learning and/or behavior problems in children living within the family environment.

Chapter II

REVIEW OF THE LITERATURE

The environment created by the family is perhaps the single most influential determinant of children's development. The relationship between descriptors of the family environment (e.g., socioeconomic status variables, family constellation variables, etc.) and indicators of children's developmental performance (e.g., intellectual functioning, academic achievement, affective development) has long been the subject of theoretical speculation. A fairly recent increasing interest in the functional relationships between children's behavior and elements of their environment has revealed moderate to high relationship between many child-environment variables.

This research obviously has particular relevance to the field of education in a number of ways: if maximizing a child's school-related performances is a fundamental objective of the educational system, then educators aware of the nature of the social, psychological, and linguistic processes that operate in families to influence children's development should actively consider this sphere of influence among the possibilities for affecting change. Of particular concern in this study is the observation that many of the children who pose special learning and behavior problems in school often reflect the inadequacies of their home environments (Range, Layton, & Roubinek, 1980; Robinson, 1980; Rutter & Madge, 1976; Schaeffer, 1972), although the salient features of the home environment and their relationship to school-related problems is less well understood.

The purpose of this review is to present the major representative studies that have investigated the relationship between family environmental variables and children's intellectual functioning, academic achievement, and affective development. Several different approaches have been taken to identify and measure environmental variables and examine their relationship to child development. For discussion purposes, these studies have been grouped into three categories based on their primary objectives: (a) to describe the characteristics and conditions of families as they relate to child performance; (b) to identify and describe the physical, social, and psychological processes through which family effects are mediated, and the relationship between these processes and child outcomes; and (c) to identify child outcomes that are causally related to family experience and behavior. Within this framework, the literature review will focus primarily on those studies that have contributed to an understanding of the relationship between family environments and the development of children's learning and behavior problems that are subsumed under the diagnostic categories of "mental retardation," "emotional and behavioral disturbances," and "learning disabilities." Also reviewed are "normal" child studies that provide important theoretical and methodological models, as well as insights for understanding environmental influences on the development of children with identified handicaps.

Descriptive Studies: Family Characteristics

Epidemiological methods of inquiry have been used by researchers interested in describing and understanding more about the nature of mental retardation, emotional disturbances, and other developmental disabilities. Epidemiology is defined as "the study of the distribution of a disease or a physiological condition in human populations and of the factors that influence this distribution" (Lilienfeld, 1976, p. 3). The epidemiologist is particularly concerned with whether the characteristics of persons with a particular condition distinguish them from those without it. The personal characteristics that are described through epidemiological inquiry include demographic characteristics (e.g., age, sex, ethnicity); biological characteristics (e.g., biochemical levels of the blood, physiological function of body systems); social and economic characteristics (e.g., socioeconomic status, educational background, occupation); and personal living habits (e.g., diet, drug use). The general purposes of epidemiological studies include providing data to elucidate the etiology of a condition, determining whether epidemiological data are consistent with current etiological hypotheses, and providing the basis for the development and evaluation of preventive procedures (Lilienfeld, 1976). This approach is particularly useful for studying conditions of unknown etiology when it becomes necessary to describe the condition in terms of its epidemiologic or genetic characteristics (Knox, 1979).

Mental Retardation

The population identified as "mentally retarded" comprises a heterogeneous grouping of individuals that have been divided into a variety of subgroups according to degree, form, and cause of their disability. For the greatest proportion of persons who obtain a diagnosis of mental retardation, and estimates range from 75% to 90%, there is no known cause of the retarded functioning (Heber, 1970; MacMillan, 1977). In order to understand this phenomenon, epidemiological studies have been carried out in the U.S. and abroad, most notably the work by Heber, Dever, and Conry (1968) and Birch, Richardson, Baird, Horobin, and Illsley (1970).

Heber et al. (1968) conducted a survey of an economically disadvantaged area to learn more about the distribution of mental retardation among a "high prevalence" group and to provide clues as to methods of identifying those families with a high probability of producing a retarded child. The survey covered nine contiguous census tracts (1960 Census data) characterized as having the lowest median family income, the greatest rate of dilapidated housing, and the greatest population density per living unit. The survey included 88 consecutive births among Negro families in those tracts where there was at least one other child, age 6 years or over, yielding a total of 586 children excluding the newborns. Mothers and all children, excluding the newborns, were administered individual intelligence tests.

The survey area was characterized by a high prevalence of mental retardation, with the mean IQ of mothers, 80.5, and that of the children, 86.3. Twenty-two percent of the survey population had IQs of 75 or below. A major survey finding was that the variable of maternal intelligence proved to be the best single predictor of low intelligence in the offspring. Mothers with IQs less than 80, comprising less than 1/2 the total group of mothers, accounted for almost 4/5 of the children with IQs below 80. Children of mothers with IQs above 80 exhibited a mean level of measured intelligence that was relatively constant as age increased (Heber et al., 1968).

The survey data revealed that a relatively small proportion of mothers accounted for a rather large proportion of children within the IQ range of retardation. These data showed that the lower the maternal IQ, the greater the probability of her children scoring low on intelligence tests. The mother with an IQ below 67 was roughly 14 times more likely to have a 6-year-old child who tested below IQ 75 than the mother whose IQ fell within the average range. The observed trend toward declining measured intelligence with increasing age of children reared in disadvantaged socioeconomic environments was evident only for children of low IQ (<80) mothers, suggesting a depressing effect on intellectual development only for those children reared in environments that were both economically and psychologically disadvantaged.

Parallel efforts to elucidate the social distribution and etiology of mental retardation through epidemiologic inquiry were conducted by Birch et al. (1970) in Aberdeen, Scotland. Of specific interest to these researchers was the interaction of biologic and social factors associated with mental "subnormality" (IQ<75) and the interrelations of social, familial, and health conditions in mental subnormality and its subvariants. The approach used for investigation was to first identify a group of children diagnosed as mentally subnormal who were born in Aberdeen and still resident there eight to ten years later. A comprehensive system of record collection and storage provided information on the social background, pregnancies, and deliveries of the total population of Aberdeen, and complete records of every child's academic progress and achievement testing made a retrospective approach to the study possible.

Results of the Birch et al. (1970) study were based on a core population of approximately 100 children between the ages of 8 to 10 years inclusive, all of whom had been administratively defined as mentally subnormal and were in special schools or institutions, or at home. Thirty percent of these children had IQ scores below 50, 20% had IQ scores of 50 to 59, and the remaining 50% had IQ scores of 60 or more. A number of noteworthy results emerged from the examination of data available on the current and antecedent characteristics of both subnormal and normal children enabling researchers to determine characteristic differences between the two groups (Birch et al., 1970).

In support of other data suggesting a greater proportion of mentally subnormal children come from the lower social classes, the Aberdeen study population yielded a prevalence rate in the unskilled manual working class nine times higher than in the nonmanual segments of the population. Within the lower social classes, there was an overrepresentation in the upper social classes. Moreover, within the lower social classes, mild mental subnormality was overrepresented in large families (five or more children), in areas of poor housing, where crowding was frequent (person/room ratio of two or more), and where the mother's premarital occupation was a semi- or unskilled manual job. By combining two family characteristics, number of children and the area of residence, a six-fold increase in the prevalence rate for mild mental subnormality was obtained in the lowest social class compared with the overall prevalence in this low social strata. Thus, the combination of the three family characteristics enabled the researchers to identify with greater precision one set of families in which mild mental subnormality was more likely to occur.

The Aberdeen researchers posited that the factors that contributed to mild mental subnormality in the study children may also have had an effect on their siblings. Alternatively, if the child had sustained biologic insult which acted solely upon himself, the intellectual functioning of the siblings would not be expected to be any different from that of siblings of children in the comparison population. In order to test this hypothesis, they compared the intelligence test scores of siblings of mildly subnormal children to that of a comparison population, using scores obtained when the children were 7 years of age. Controlling for the number of siblings for whom scores were available, results indicated a higher proportion (63%) of siblings of low functioning children in regular schools had intelligence scores less than 90, when compared to siblings of the comparison group. Similar differences were found when a score of less than 80 was used. Moreover, there was a smaller percentage of siblings of low IQ children than of siblings of the comparison group that had high intelligence test scores. The clearest evidence of differences between these two groups of siblings is in their administrative designation as mentally subnormal and their placement in special schools. The percentage of mentally subnormal siblings of minimally subnormal children was 12 times greater than that of the comparison group. These findings strongly suggested that the family factors associated with mild mental subnormality were associated with reduced IQ in other children in the family as well (Birch et al., 1970).

The findings of Birch and his associates indicated that certain identifiable family conditions evident in the lower social classes were associated with a higher "risk" for the presence of mild mental subnormality and low intelligence scores in children. To further test this hypothesis, they classified the low social class families of the mildly subnormal children according to higher- and lower-risk conditions, on the basis of the family characteristics considered earlier, with the additional inclusion of a measure of poverty and family disorganization. Using a 3-point rating scale, poverty was assessed by the amount of assistance given to the families by social and welfare agencies, and family disorganization was rated on the basis of prolonged unemployment, parental desertion, prison sentences, and evidence of child neglect. Researchers calculated the percentage of mentally subnormal siblings and siblings with IQ scores of less than 80 at 7 years of age for each of the risk conditions listed in Table 1.

For each characteristic, they found a higher proportion of mentally subnormal siblings in the higher risk group than in the lower risk group. With the exception of area of residence, the proportion of siblings with low IQ scores was greater for higher risk conditions than for lower risk conditions. When scores for the mentally subnormal siblings were combined with the siblings in regular schools who had an IQ of less than 80, all the results were in the expected direction. Furthermore, the researchers were able to differentiate between regular school children in the lower social classes and their families (in a separate analysis) on the basis of their higher- and lower-risk criteria. For all the family characteristics, higher risk conditions were associated with lower levels of intelligence (<100) suggesting that the factors associated with mild mental subnormality within the lower social classes also have a general association with levels of intellectual competence in the total population of children within these social classes (Birch et al., 1970).

Table 1

Risk Variables Used in the Aberdeen Epidemiologic Study of Mental Subnormality

Higher Risk	Lower Risk
Five children or more	Fewer than five children
Residence in interwar tenement	Residence in other than interwar tenement
Person per room ratio of two or more	Person per room ratio of less than two
Mother's premarital occupation: semi- or unskilled manual	Mother's premarital occupation: professional, clerical, or skilled
Poverty status: severe	Poverty status: slight or moderate
Family disorganization: severe	Family disorganization: slight or moderate

Note. (Birch, Richardson, Baird, Horobin, & Illsley, 1970)

The interpretations of findings offered by Birch and associates lend insight into the mechanisms by which family background characteristics become translated into levels of ability in children. They noted that although every "social fact" observed in the study could be used to support a genetic explanation, "the strength of the associations between social variables and minimal subnormality gives good cause for speculating about the possible ways in which the social experience of these children might have contributed to subnormality" (p. 88). The strong association between subnormality and family size was hypothesized to be a reflection of the type of parents who have large families rather than the direct effect of "sibling density," the latter often interpreted as resulting in a reduction of adult care and stimulation (Cicirelli, 1978; Hunt, 1961). Commenting on their study population, Birch et al. (1970) noted:

> Such parents, in a largely Protestant community, where family planning is practicable and is, in fact, practiced by a sizable section of the population, tend to be relatively fatalistic, to have low aspirations, to feel unable or unwilling to exercise control over their lives and their environment, and to be present- rather than future-oriented. These characteristics, manifest in the parents' apparent inability to plan their family growth, imply a set of value orientations which are incompatible with academic success. They indicate the existence of a subculture rooted in that economic insecurity which hitherto has been inseparable from the less skilled manual occupations. In such family milieux, attitudes toward education and academic achievement are indifferent, if not hostile, and the school may be perceived by the children as an alien environment, representing alien values. (p. 89)

Residence in interwar tenements, with the associated crowding into usually four habitable rooms or fewer, carries many of the same possible meanings as does family size. The two conditions may in fact be present for the same family. A third major factor, mother's premarital occupation, provides a measure of her education, skill, and work milieu that are often later affected by marriage and family responsibilities. In the Aberdeen study, the very high percentage of mild mental subnormality and borderline children in the lowest social classes with semi-skilled or unskilled mothers indicated that these families comprised the lowest status group in the community.

Taken together, the results of the epidemiological studies conducted by Heber et al. (1968) and Birch et al. (1970), as well as other similar investigations (see Clarke & Clarke, 1974), strongly suggest a "microenvironmental setting" that is characterized by a number of identifiable family characteristics and that is associated with the highest prevalence of children who are functioning in the mild range of mental retardation. Moreover, these researchers were able to identify variations in families within the lower social classes that describe higher- and lower-risk conditions for mild mental retardation. Thus, in what appears to be a fairly homogeneous lower social class environment, some families appear to be much more vulnerable than others, producing a greater proportion of the children who exhibit lower levels of intellectual functioning.

Emotional and Behavioral Disturbances

Epidemiological inquiry is an approach that has also been used to study psychological disorders in childhood. Most disordered behaviors of children are believed to be the result of multiple causes (Rutter, 1981), although the relative importance of different factors is largely unknown. Unlike the standardized measures of intelligence and the psychometric definition of mental retardation, defining a child's psychological disorder is more difficult. In the study of behavioral deviance where the goal is to define service need, a disorder is most clearly defined using the criteria of persistence and severity of impairment (Graham, 1979). Although disorders defined by social criteria can be classified in a variety of ways, the vast majority of deviant behaviors of children and adolescents can be subsumed under four major patterns: conduct disorder, anxiety-withdrawn, immaturity, and socialized aggression (Quay, 1979). The prevalence of these disorders varies from a minimum of approximately 6% to a maximum of 20% of the child population, with variations due in part to studies reporting different methods and different criteria for identifying children's disorders (Graham, 1979).

Among the studies that have contributed to the list of factors associated with the overall prevalence of psychological disorders (Behar & Stringfield, 1974; Kastrup, 1976; Lavik, 1977; Miller, Court, Walton, & Knox, 1974; Minde, 1976), probably the most comprehensive studies available are those by Richman and her associates (Richman, 1977(a) (b); Richman & Graham, 1971; Richman, Stevenson, & Graham, 1975) and Rutter and his associates (Rutter, Cox, Tupling, Berger, & Yule, 1975; Rutter, Tizard & Whitmore, 1970; Rutter, Yule, Quinton, Rowlands, Yule, & Berger, 1975).

Richman et al. (1975) investigated the prevalence of behavior problems of 3-year-old children living in a London borough. The sample was selected from a complete register of all families with preschool children living in the borough. In the first stage of the survey, trained interviewers visited the families at home and conducted a semi- structured interview that included questions concerning the target child's development and behavior, social aspects of the family, and demographic information. The interview included a behavior screening questionnaire (BSQ) tapping 14 dimensions of behavior: Test Task Understanding, Rapport, Guessing, Speed of Response, Spontaneous Speech, Directive Speech, Task Orientation, Motor Activity, Fidgetiness, Response Perseveration, Need for Tester Praise, Need for Parental Contact, Habits, and Mood. Those children who received a score of 10 or more points on the BSQ were considered the "problem group," and were matched by sex and social class with the child nearest on the register list who scored less than 10 points, thus forming a control group and a total of 99 matched pairs.

The second stage of the survey included a developmental assessment of each child and a semi-structured interview with the family concerning parents' health, family life and relationships, and social support and contacts. Results of the two-stage survey provided information about the prevalence and incidence of behavior problems in young children, and family and social factors associated with preschool behavior problems.

Based on a final clinical rating of the child's behavioral status, approximately 7% of the total population of 3-year-olds had a behavior problem that was moderate to severe, a finding similar to those in older age groups (Graham & Rutter, 1973; Rutter, Tizard, & Whitmore, 1970), and 15% had mild behavior problems. There were no significant sex differences in the overall rates of moderate and severe problems, nor were there significant differences in the prevalence rates of problems in different social classes. There were, however, a number of other social and family factors that differentiated the behavior problem group from the group without behavior problems.

From information obtained during first- and second-stage interviews, clinical ratings were made on the psychiatric status of the parents and on the marital relationship, using a consensus rating between the interviewers. Assessment of the parents' psychiatric status was based on information concerning health and eating habits, activities, emotional states, and family and friend relationship changes. The mothers also completed a health and emotional symptom checklist, the Cornell Medical Index (CMI). The marital relationship rating was based on reported information about the parents' communication, consensus, expression of emotions, and enjoyment of each other's company. Impressions about marriage most often reflected the mother's point of view since she was the parent most often seen by the interviewer. The researchers noted that previous work (Rutter & Brown, 1966) has shown that high agreement can be obtained about the relationship when the two spouses are seen separately (Richman, 1977).

Major findings of the survey indicated preschool behavior problems were significantly associated with a number of family and social factors. There was a significant relationship between the presence of a behavior problem in the child and a poor marital relationship, characterized by frequent disagreements, little or no shared decision making, and low maternal satisfaction concerning help received from her spouse. There was no relationship between a child's behavior problems and the psychiatric status of fathers, possibly due in part to few reported symptoms from their wives (Richman, 1977). There was, however, a significant relationship between the psychiatric status of mothers, as evidenced in a high rate of depressive disturbance, and a child with behavior problems. Many of the depressed mothers also expressed feelings of isolation (Richman, 1977).

Although there were no significant differences by social class in rates of behavior problems, families with five or more children were more likely to have a child with a behavior problem. Also, a "stress score" was calculated for each family by adding all the events that had occurred during the previous year of a seriously stressful or threatening nature, such as work and money difficulties, housing problems, serious illness, births, deaths, and problems in personal relations. Children's behavior problems and maternal depression were both associated with higher total stress scores, with more behavior problems associated with work, money, and housing difficulties.

Following this line of inquiry, Richman found stressful housing conditions, rated on the basis of whether the house was in poor condition (e.g., damp rooms, no utilities) were associated with maternal depression. There was also a significant increase in behavior problems in children living in high-rise buildings as compared to other forms of housing, particularly single family houses. Richman (1977) noted that housing conditions may be particularly important to mothers rearing young children since the home is where they spend much of their working time.

Based on her study, Richman reported ". . . an increased clinical awareness that all family members are likely to be involved when one of them is a patient and that this is particularly so where disturbances in young children are concerned" (1977, p. 526). While the role of social factors in the etiology of behavior disturbances remains controversial, results of the Richman study suggest the contributory role of social and family stress conditions and the necessary consideration of the interaction between parents and children in the treatment of either group.

Rutter and his associates were also interested in the observation that rates of psychiatric disorder and of educational problems in children may vary considerably according to geographic area, types of living conditions, and social status. In order to examine these differences more closely, they investigated the epidemiological characteristics and social and psychological correlates of child psychiatric disorder and specific reading retardation in an inner London borough (ILB) and on the Isle of Wight (IOW), a semirural island (Berger, Yule, & Rutter, 1975; Rutter, Cox, Tupling, Berger, & Yule, 1975; Rutter, Yule, Quinton, Rowlands, Yule, & Berger, 1975). The findings on reading difficulties refer to a different sample than the one used in the major investigation and will be discussed in a later section of the review.

In the ILB/IOW study, 10-year-old children who attended local schools were chosen for study and a two-stage procedure was used to identify children with psychiatric disorders. First, the total population was screened for further study by means of a teacher questionnaire made up of 26-item descriptions of overt behavior that cover the main emotional and behavioral problems of children as they might be seen in a school setting. A cut-off score of nine or more was used as an operational definition of deviance on the questionnaire. In addition, teachers completed a social questionnaire that included the place of birth of the target child and both parents, and the occupation of the father. Immigrant families were excluded from the investigation in order to provide comparable groups of children from both areas (Rutter, Cox, Tupling, Berger, & Yule, 1975).

From an indigenous population of 1,689 children, two groups were selected for individual study: (a) a randomly selected control group (groups of 106 from the ILB and 107 from the IOW); and (b) children with scores of nine or more on the teacher's questionnaire. As a check on the validity of the teacher's questionnaire, a short interview was conducted with the current classroom teacher of children selected for intensive study in the ILB. An open-ended questionnaire was used with the IOW teachers who were questioned more specifically about the target child's emotional disturbance, disturbances of conduct, and disturbances of relationships with peers or staff. These interview schedules were rated independently by a psychiatrist on a 4-point scale of disturbance and an overall designation of psychiatric disorder.

Mothers of study children were intensively interviewed by a trained interviewer using a standardized approach of known reliability (Graham & Rutter, 1968; Rutter & Brown, 1966). The interview schedule was composed of a series of set questions covering a wide range of possible emotional or behavioral problems of the child, and questions about family interaction, relationships, and style of life. A combination of interview techniques were used to evaluate family activities, events, attitudes, and feelings. Specific frequencies and descriptions of family activities were sought rather than general ratings in an effort to divest events of their emotional meaning. Feelings and attitudes were assessed differently, using the interview as a standard stimulus to elicit emotion. Informants were encouraged to express their feelings about family life and about other family members, and interviewers were instructed to pay particular attention to the way things were said. In addition, a number of summary scales were completed by the interviewer, taking into account all aspects of the interview, e.g., expressed feelings, observations, and reported information.

Each family interview took two to three hours and involved a wide range of skills and techniques on the part of the interviewer. In the majority of cases the interview was conducted with the mother or mother figure to the target child. The father was seen for a briefer interview (about 30 minutes) and both parents completed a "malaise" inventory, a 24-item questionnaire tapping neurotic and psychosomatic symptoms (Rutter, Yule, Quinton, Rowlands, Yule, & Berger, 1975). It should be noted that among both the IOW and ILB families, 8% either refused to be seen or could not be contacted after repeated home visits. There was a tendency for refusals to be higher among families of children with deviant scores on the teacher questionnaire than among those with nondeviant scores (Rutter, Cox, Tupling, Berger, & Yule, 1975).

Results of the IOW/ILB study indicated a rate of behavioral deviance for inner-city children nearly double the rate for children in the semirural sample. As judged by scores on the teacher questionnaire, this greater rate of deviancy in the ILB children was statistically significant, was equally evident in boys and girls, and applied both to "neurotic" type deviance and "conduct" type deviance. Seventeen and one-half percent of the ILB children were rated as somewhat "miserable, unhappy, tearful or distressed," compared to 8.3% of the IOW children; 14.7% as somewhat "resentful or aggressive when corrected," compared with 10.6%; and 27.3% as somewhat "restless, has difficulty staying seated for long," compared with 21.5%, respectively. It is also notable that 3.9% of the ILB children were rated as "not much liked by other children," compared with 1.8% of the IOW children, and 5.8% as "tends to be absent from school for trivial reasons," compared to 1.3%, respectively. Validity checks on the teacher questionnaires strongly supported very real deviance rates in the two areas (Graham, 1979; Rutter, Cox, Tupling, Berger, & Yule, 1975).

The IOW/ILB researchers also examined the prevalence of psychiatric disorder in the two areas, a judgment based on impaired function determined from parental interview information. Again, the rate of disorder was twice as high among the ILB children as it was among the IOW children. The higher rate in the city children applied to both sexes but was much more marked in girls than in boys. The researchers attributed the greater area difference in rate for girls to the high rate of emotional disturbance in the non-selected ILB girls. Interestingly, this finding only applied to parental interview findings. On the teacher interview data, the unusually higher rate of disorder applied to boys.

Rutter and his colleagues applied numerous procedures to ensure the reliability and validity of their results and to examine rival hypotheses. Of particular interest is the finding that psychiatric disorder in the child was diagnosed with almost exactly the same frequency whether the mother was seen alone or together with her husband. They also found impressive evidence for the reliability and validity of the teacher questionnaire and psychiatric rating of parental interviews. Previous investigations had demonstrated the reliability of the parental interview both over time and between interviewers (Graham & Rutter, 1968; Rutter, Tizard, & Whitmore, 1970). The possibility that higher rates of disorder in the ILB might be an effect of migration of disturbed families into the city was excluded in light of the finding that the proportion of parents of disturbed city children who had moved into the borough was not higher than in the randomly selected nondisturbed group. Thus, there was substantial support for the conclusion that 10-year-old children living in the ILB not only showed more behavioral deviance than did the IOW children of the same age, but that they also exhibited more psychiatric disorder (Rutter, Cox, Tupling, Berger, & Yule, 1975).

In order to gain understandings as to why the rates of behavioral disturbance and psychiatric disorders differed so markedly between London and the Isle of Wight, researchers examined a number of family and social characteristics. In particular, four groups of variables were considered: family disturbance, parental deviance, social circumstances, and school characteristics. Each of these ecological variable groups and their relationship to emotional and behavioral disturbances will be discussed and related to other work that has been reported.

Disturbed family relationships were more commonly found in both the IOW and the ILB groups of children showing psychiatric disorder. The differences between the disordered and "normal" child families was most marked in the area of severe marital discord, determined by the interviewer on a summary rating of demonstrated reliability[1].

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[1] It is notable that inter-rater reliability was high (r = 0.82) for independent ratings by separate interviewers each of whom only saw the husband or only the wife (Rutter, Yule, Quinton, Rowlands, Yule, & Berger, 1975).

Marital discord, characterized by disagreement, tension, and hostility was more closely associated with child disorder than marital discord reflecting apathy and indifference.

Another index of family disturbance is the number of times a child has been taken from the home and placed elsewhere, since family difficulties are a common antecedent of this occurrence (Schaffer & Schaffer, 1968; Wolkind & Rutter, 1973). Among the children with psychiatric disorder, 16% to 19% had spend at least one continuous week in the care of a local authority, e.g., foster home, compared to only about 2% of the "normal" children.

"Broken" homes constituted a third index of disturbed family relationships more commonly found among children with disorders in the ILB sample. A "broken" home was defined as one where children were not living with both their natural parents (e.g., they were with one parent or only with stepparents, etc.). This relationship did not hold to the same extent on the IOW, and closer examination of the characteristics of children's homes revealed that on the IOW, "broken" homes more often described an adoption, death of one parent, or remarriage. Many more London children were living in one-parent families, usually with an unsupported mother. Thus, "broken" home meant very different circumstances in the two areas and in the ILB, it was significantly related to children's psychiatric condition.

A strained marital relationship has been identified as a contributory factor in the overall rates of disorder among children in other studies. Lavik (1977) found the percentage of adolescents with psychiatric disorder to be higher in families where the parents are divorced, separated, and unmarried than in those whose biological parents were living together. However, the intactness of nuclear families does not guarantee positive family relationships. Research findings consistently show that children reared in nuclear families characterized by conflict or detachment are more poorly adjusted than children in harmonious, well-functioning single parent homes (Hetherington & Martin, 1979; McCord, McCord, & Thurber, 1962; Nye, 1957).

In the IOW/ILB study, psychiatric disorders of the mother, but not the father, was strongly associated with child psychiatric disorders on the IOW only. This association was not significant in the ILB, largely because of the very high rate of psychiatric conditions in the mothers of "normal" children (Rutter, Yule, Quinton, Rowlands, Yule, & Berger, 1975). Mean "malaise" inventory scores of both groups of mothers of disordered children were significantly above that of both groups of mothers of "normal" children. There was a tendency for both the IOW and ILB fathers' "malaise" score to be higher for children with psychiatric disorder, although the difference fell short of statistical significance. In both the IOW and the ILB, antisocial behavior of the fathers was associated with disorder in the children.

It has been shown in the IOW/ILB study and in other epidemiological studies (Hare & Shaw, 1965, as cited in Graham. 1979; Richman et al., 1975), that mental illness in parents, particularly mothers, is closely associated with psychiatric disorders in children. It should be noted, however, that mental illness in these studies usually refers mainly to anxiety, depression, and other personality disorders rather than the more severe neurotic and psychotic conditions.

In both the IOW and the ILB, large family size was found to be associated with child psychiatric disorder, although the pattern was somewhat different for the two areas. On the IOW, families with four or more children differentiated the disordered from the "normal" group, whereas in the ILB, "normal" from disordered children were differentiable only when families of at least five children were considered. Overcrowding (person per room ratio greater than 1.0) was associated with the disordered group on the IOW but this relationship did not hold for the ILB, where crowding was much more common. In both populations, child psychiatric disorder was more common when the father had a semi-skilled or unskilled manual job, but this relationship only reached significance in the ILB.

The IOW/ILB study and other investigations of the relationship between social status and child disorder have revealed no clear-cut association between these variables (Lapouse & Monk, 1964; Richman et al., 1975; Rutter, Tizard, & Whitmore, 1970; West & Farrington, 1973). This is not surprising in light of the fact that these studies have used different and often gross or singular measures of social status. In regard to their findings of infrequent associations between socioeconomic status and behavioral deviance, Lapouse and Monk (1964) noted that their use of only two social groups did not permit sharp socioeconomic differentiation between them. Yet West and Farrington (1973) reported that low-income, poor housing, neglected accommodations, and large families were strongly associated with conduct disorders. Graham (1979) believes that "social adequacy" or "material possessions" are perhaps better indicators of social status than is paternal occupation. In a critical review of the measurement of socioeconomic status, Mueller and Parcel (1981) recommend using an occupational index of socioeconomic status (e.g., Duncan, 1961) in child development studies.

Thus far, family and social variables investigated in the IOW/ILB study have been considered in relation to child psychiatric disorder as determined from the parental interview. Rutter, Yule, Quinton, Rowlands, Yule, and Berger (1975) also examined these ecological variables using the teacher's questionnaire as the sole measure of behavioral deviance in the child. In doing this, they note, ". . . we were using a measure of the children's behavior outside the situation (i.e., the home) where most of the adverse influences were operative. This means that the test of factors associated with deviance is a harsh one which certainly underestimates the effect of family influences on children's behavior" (Rutter, Yule, Quinton, Rowlands, Yule & Berger, 1975, p. 526). Results revealed very similar patterns of association and many statistically significant variable relationships. These researchers concluded that in both populations the family, parental, and social variables associated with deviance and disorder in the children were valid findings.

The IOW/ILB study also examined a set of school variables and their relationship to child deviance based on the teacher's questionnaire. High rates of behavioral deviance were evident in schools characterized by high teacher and student turnover, a high rate of absenteeism, a high proportion of immigrant children, and a high percentage of children receiving hot meals (i.e., an index of low income). Absenteeism has been shown to differentiate among schools serving children from very similar areas (Galloway, 1976; Reynolds & Murgatroyd, 1974). These findings suggest that the school itself may contribute a unique set of influences to the development of children's behavior problems.

In summary, the IOW/ILB study revealed that emotional and behavioral disorders of children were twice as common in the 10-year-old children living in an inner city borough as in children living in a semirural area. Four sets of variables -- family discord, parental deviance, social disadvantage, and certain school characteristics -- were associated with child disorder and deviance within both geographic areas, and these same adverse factors were more commonly found in London (Rutter, Yule, Quinton, Rowlands, Yule, & Berger, 1975).

The studies by Richman, Rutter and their associates, as well as other studies cited above, provide important clues to aspects of family life, social conditions, and school circumstances that adversely influence children's behavior. The direction for further research in this area is clearly advanced by Rutter, Yule, Quinton, Rowlands, Yule, & Berger (1975):

> It is important to recognise that we know relatively little about the psychological or social mechanisms which may be involved. Many of the adverse influences are interrelated, and analyses to partial out the separate effects of each variable have yet to be carried out. There is a great need to distinguish the various different mechanisms involved in disparate types of "deprivation" and "disturbance" of family life and relationships. (p. 530)

Learning Disabilities and Related Difficulties

The studies reviewed up to this point have relied on epidemiological methods of inquiry to describe the environmental correlates of mental retardation and emotional and behavioral disturbances. Another approach to describing behavioral phenomena is a longitudinal approach, used predominantly in studies of normal child development. Werner and her associates (Werner, Bierman, & French, 1971; Werner & Smith, 1977) employed a longitudinal design in their study of the cumulative effects of perinatal stress and quality of the family environment on the physical, intellectual, and social development of a multiracial cohort of children. This study represents one of the few attempts to include a description of the family environmental correlates of learning disabilities, with the majority of follow-up studies in this area focusing exclusively on the affective characteristics and learning difficulties of the child

(Mendelson, Johnson & Stewart,, 1971; Menkes, Rowe, & Menkes, 1967; Weiss, Minde, Werry, Douglas, & Nemeth, 1971).

Werner and her colleagues have followed up into late adolescence a cohort of children born on the island of Kauai, Hawaii, in 1955. The Kauai study began in the perinatal period, followed all children in an entire community, representing all socioeconomic and ethnic groups, and maintained 90% (N=600) of the original sample through 18 years of age. Data collection began with an assessment of the reproductive histories and the physical and emotional status of the mothers from the fourth week of gestation to delivery. Through the cooperative assistance of health, educational, and social service agencies, comprehensive psychological and pediatric information was collected on children and families when the children were 2 and 10 years of age, and interviews were conducted with the children when they reached late adolescence (17-18 years). Family interview questions tapped areas such as educational attainment of parents, standard of living, socioeconomic variables, family stability, quality of educational stimulation, and quality of emotional support. A combination of parental interview and observational ratings were used to quantify these variables (Werner & Smith, 1977).

A comprehensive system of evaluation and a low study attrition rate allowed for a rare view of the developmental progression of handicapping conditions and for a number of family-child variable relationships to be examined. Werner et al. (1971) reported the findings from the perinatal period to age 10 years for a cohort of 844 children. In the first two years of life, minor perinatal handicaps had been recognized in 7% of the liveborn; 6.3% had conditions requiring short-term medical and nursing services; and 3.7% were severely handicapped and required long-term medical or special educational services. By age 10 years, 6.6% of the children were moderately or severely physically handicapped; 2.3% were in classes for the mentally retarded; 10% were in grades below their chronological age; 40% received grades of "D" or lower in one or several basic skill areas; 5% were failing; and about 25% had some behavior problems (Werner et al., 1971).

At the end of the 10 year follow-up, recommendations were made for individual children needing help. By far the greatest demand for services was for remedial help in the basic skill subjects. Approximately 3% of the 1955 cohort had been diagnosed in need of placement in a learning disability class at 10 years of age on the basis of serious reading and communication problems (although functioning in the normal intelligence range), visual-motor impairment, hyperactivity, and difficulties in attention and concentration. Only one out of five children in this group had any evidence of "organicity" on pediatric-neurological examinations.

Serious problems of the learning disabled group were still evident in late adolescence. Agency records indicated the behavior of four out of five of these children was characterized by academic underachievement, absenteeism, truancy, and misconduct. These adolescents showed deficiencies in perceptual-motor skills, reading, writing, interpersonal skills, and other cognitive problem-solving situations. They received high external scores on the Locus of

Control Scale (Nowicki & Strickland, 1973), suggesting these individuals did not feel their actions were under their own control. It is also noteworthy that most of the youth who became delinquent in adolescence had been considered in need of remedial education, special class placement, or mental health services by 10 years of age, although at that time they did not differ from controls or measures of aptitude and achievement. At 18 years of age, delinquent youth did score significantly lower than controls on measures of interpersonal skills, maturity, responsibility, and cognitive problem-solving skills (Werner & Smith, 1977).

What accounted for performance differences among children in the Kauai study? Although severe perinatal stress was strongly associated with serious behavior, learning, and physical problems, the relationship between moderate perinatal stress and these problems was less clear. Information obtained from family interviews suggested the importance of considering family influences in the development of learning difficulties. Indices of socioeconomic status, educational stimulation, and emotional support showed moderate intercorrelations (.37 to .57) and each of these family variables was significantly related to school achievement and learning problems (IQ, perceptual and language problems) at 10 years of age, with the highest relationship obtained for educational stimulation in relation to children's difficulties. Lack of emotional support in the family was most highly associated with emotional problems of children. In the absence of perinatal stress and early family instability, the majority of children with behavior problems (mostly short-term) appeared to be "painful, yet temporary reactions to environmental stress" (Werner & Smith, 1977).

Results of the Kauai study indicated that measures of the family environment were more related to children's learning, achievement, and emotional problems than was socioeconomic status. The authors concluded that, "Ten times more children had problems attributed to the effects of a poor environment than to the effects of serious perinatal stress" (Werner et al., 1971). Results further indicated that the relationship between perinatal stress and the child's competence decreased with age, but the relationship between environmental factors and competence increased with age. Between 2 and 10 years of age, the difference in IQ points increased from 4 points to 20 points between children who received the least and most educational stimulation at home.

A number of subcultural differences were also evident. In all groups of children at biological risk for learning and behavior problems, children from very low-income families were overrepresented. Predictions of serious problems in childhood and adolescence from data at birth, infancy, and early childhood were consistently higher for children from poor homes. Social class and ethnicity independently contributed to measures of children's behavior, and social class differences in communicative competence (Standard English) were greater than ethnic differences and increased during adolescence. However, Werner and Smith (1977) emphasized,

> Poverty alone was not a sufficient condition for the likelihood of significant coping problems. The overwhelming majority of the control children who were

> drawn from the same poor and culturally different backgrounds as those with learning disabilities and long-term health problems coped very effectively in the second decade of their lives; few of the control children from low and very low SES homes committed any delinquent acts or presented discipline or achievement problems in school. (pp. 218-219)

The researchers noted that a low standard of living increased the likelihood of the infant being subject to perinatal stress and early family stability. But among both lower- and middle-class children, it was the interaction of biological stress and family instability that increased the likelihood of serious learning and behavior problems. Chances for improvement of coping skills did not increase with higher social class position for those children in need of help at 10 years of age. Werner and Smith (1977) concurred with the observation of Robins (1966), who also conducted a longitudinal study of children through adolescence:

> Childhood behavior and family patterns rather than social class position lead to the hopelessness and alienation found largely in the bottom stratum . . . antisocial children reared in middle-class homes develop into much the same kind of impulsive and imprudent adults that lower-class, antisocial children do. (p. 304)

In summary, the Kauai study revealed a set of eleven key predictors of serious learning and behavior problems of children. Singly, and in combination, these biological, psychological, and sociological variables showed significant relationships with poor developmental outcome at 2 years of age and serious learning and behavior problems at 10 and 18 years of age: (a) moderate to marked degree of perinatal stress; (b) presence of congenital defects; (c) very high or very low levels of infant activity; (d) Cattell IQ score below 80 by age 2; (e) low Primary Mental Abilities IQ score; (f) moderate to marked degree of physical handicap by age 10; (g) recognized need for placement in a learning disability class by age 10; (h) recognized need for more than six months of mental health services by age 10; (i) low level of maternal education; (j) low standard of living at birth, age 2, or age 10; and (k) low family stability at age 2 (Werner & Smith, 1977).

Thus, in the Kauai study, there emerged substantial support for the salient role of family environment variables in the development of children's learning and behavior problems. The following discussion will focus on social and family variables that have been shown to be associated with limited communication skills, e.g., reading and language which, in the Kauai study, led to cumulative problems in coping with cognitive as well as affective demands. Werner and Smith (1977) noted that competence in communication skills was a major factor contributing to improvement in all groups at biological risk in the Kauai sample.

Reading difficulties. Lerner (1971) has noted that one of the major academic difficulties of children with learning disabilities is that they are poor readers. National concern for children's reading problems is reflected in the 1974 reported figures for reading achievement for several U.S. cities: New York City, Washington D.C., Chicago and Cleveland all reported that 66% to 70% of their elementary school children were reading below the national average ("Reading Scores by Schools," 1974). These reports of low reading achievement were essentially unchanged five years later ("Reading Scores of New York City Schools Show Slight Improvement," 1979).

A number of studies in the U.S. and abroad have revealed considerable regional variation in rates of reading difficulties. Miller, Magolin, and Yolles (1957) and Eisenberg (1966) found reading disabilities to be more prevalent in areas of the U.S. characterized by low social status and urbanization. A study by the Inner London Education Authority (1970, as cited in Berger et al., 1975) has shown that elementary school children in London have an average reading level below national norms. Makita's (1968) teacher survey results suggested that the prevalence of reading disabilities in Japan was significantly below that in Western countries. Three additional studies have examined regional differences more closely by investigating the associations between family and social variables and children's reading difficulties (Davie, Butler, & Goldstein, 1972; Kovlin, Gardside, Nicol, MacMillan, Wolstenholme, & Leitch, 1977; Rutter, Yule, Quinton, Rowlands, Yule, & Berger, 1975; Yule & Rutter, 1975). Each of these studies will be reviewed and major findings reported.

Davie et al. (1972) reported the results of the National Child Development Study, a follow-up investigation of children from England, Scotland, and Wales born during one week in 1958. The original intent of the study was to study the British maternity services and investigate the chances of perinatal death, but in 1964 it became possible to trace and study these children again. The researchers successfully contacted 92% of the original sample

(N=15,468) and gathered information from four main sources: (a) information obtained through the schools, including a structured teacher questionnaire, which included items reflecting parent interest, and a teacher rating of the child's behavior; (b) a battery of tests administered to each child (Southgate Reading Test; "copying designs" test, "drawing a man" test, "arithmatic problem"); (c) structured interviews conducted primarily with mothers by an agent of the schools, e.g., a "health visitor"; and (d) medical examinations conducted by school health services.

For purposes of the present study, it is important to note the major considerations guiding the design of the interview. First, the researchers gave consideration to the total amount of information that was practical to collect and analyze. Second, they felt it was important to conduct an interview that contained highly objective questions to ensure comparability of information obtained by different interviewers. The final parental interview schedule included questions about the family and home, such as the size of the family (number of children under age 21), parental situation, father's occupation and education, mother's occupation, type of housing, and extent of household amenities. Parents were also asked retrospective information about the child, such as separations from the family, preschool experiences, and current information about many aspects of the child's behavior (Davie et al., 1972).

These researchers examined particular aspects of the home environment, regional differences in these environmental factors, and their relationship to children's educational attainments at 7 years of age. An expected social class trend was evident for family size, with a tendency for middle-class families to be smaller than working class families. Regional differences were also apparent, with family size in Scotland greater than in England or Wales. Yet when allowances were made for the effects of social class and region, children in one- or two-child families had a higher reading attainment than children in a family of five children or more. Davie et al. (1972) reported this difference was equivalent to a gain in reading age of about 12 months[2]. The association between family size and arithmetic attainment was much smaller and was interpreted by the researchers as support to the notion that children from large families are most disadvantaged. They further stated that among larger families "there is likely to be a higher proportion of parents whose attitude is rather reckless and irresponsible, those who in general do not manage their affairs very successfully, and those who tend to live for the present" (Davie et al., 1972, p. 34).

[2] Davie, Butler, and Goldstein (1972) did not describe how they arrived at reading and arithmetic age gains. The levels of significance between variables under study were also absent from the report.

The relationship between academic performance and parents' education was also examined. Analysis was confined to children who were living with both natural parents, which resulted in 64% of the children with with parents neither of whom had graduated from school. There was a clear social class gradient, with 87% of these families represented in the lowest social class. Results for reading attainment indicated that both the mother's and fathers's education were of considerable importance, even when allowances were made for social class, family size, and sex of the target child. The effect of a higher level of educational attainment by the parent was reported to be equivalent to approximately 6 months gain in reading age for the child. Parental education was associated with arithmetic attainment to a greater degree than family size, although social class was the most potent predictor in this analysis. Davie et al. (1972) suggested that extended educational experiences identify parents with certain attitudes, which are acquired by their children, who are then more inclined to take advantage of schooling in their elementary years.

Parental interest in their children's education was also examined in relation to academic attainment. Specifically, three measures of parental interest were used: (a) teacher's rating, (b) whether or not the parents had visited the school to discuss their child's education, and (c) the parents' aspirations for the child. Social class differences for these variables were large, with much less interest in children's education shown by families in the lowest versus the highest social class. Although there was a greater likelihood that parents from the higher social classes would "approach" the school, differences across social class between the "approach" group and the "not approach" group were highly significant in relation to reading scores for boys and girls. In other words, children from families who initiated contact with the school had better reading ability than children from families who did not initiate contact.

Regional differences in reading ability also provided clues as to what features of the home environment increase the motivation for children to read or advance their readiness to do so. Results showed that the proportion of good readers (Southgate Reading Test score, 29-30) in Scotland was markedly higher than in any other region of Britain, and the proportion of children in Scotland who had progressed beyond their basic reading level was 10% to 12% higher than in England and Wales, respectively. Partial explanation of these differences was suggested by the parental interview question that asked whether parents read to their children. Results showed that Scottish parents, both mothers and fathers, more often read to their children than parents in either England or Wales. Interestingly, at 7 years of age, these children were as a group already reading fluently, suggesting that Scottish parents were supplementing and reinforcing their children's reading experiences (Davie et al., 1972).

A number of additional family environmental variables were associated with reading attainment. The group of children living in an "atypical" family situation (i.e., without both natural parents) contained more poor readers than the "typical" family group of children. Although the "atypical" family group was comprised of more working class families, comparison within social class groups indicated that children in "atypical" middle-class families or in skilled manual working class families were still shown to be at some disadvantage. A family home situation that was characterized by overcrowding (person per room ratio greater than 1.5) and a lack of basic household amenities (i.e., hot water, bathroom, indoor lavatory) was associated with lower reading performance, controlling for social class, region, type of housing, and sex of target child. The effect of absence or shared use of all basic amenities and overcrowding were each reported to be equivalent to approximately nine months retardation in reading age (Davie et al., 1972).

In their conclusion, Davie et al. (1972) estimated that the gap in terms of average reading performance of the most and the least advantaged children was over four years. The most potent factors influencing reading performance appeared to be in the home environment. The researchers did not, however, suggest a causal link between lack of hot water and children's reading attainment. Rather, they suggested:

> Poor housing conditions may well lead to a low standard of physical health; depression and irritability in parents; and may produce a feeling of "distance from the more privileged section of society" (with which the school may be identified). Thus a combination of adverse

> environmental circumstances may well have a deleterious effect on children's development. (Davie et al., 1972, p. 57)

Kovlin and his associates in Great Britain also examined the social and family correlates of children's reading ability, as well as classroom behavior, peer acceptance, and absenteeism (Kovlin et al., 1977). The first stage of their study involved the screening of 515 children with a mean age of 7 years and 9 months. Almost equal numbers of boys and girls represented six area schools and a social class distribution slightly below the national average. Five criterion groups were formed on the basis of a multiple screening procedure: (a) children identified as "isolated" by peer sociometric procedures; (b) children identified as "rejected" by peer sociometric procedures; (c) children identified as nonreaders by a reading quotient of 75 or less on the Young Group Reading Test; (d) children identified by the Rutter Teacher Rating Scale B as showing classroom behavior problems; and (e) children identified by teachers as one who "tends to be absent from school for trivial reasons." A group of "normal" controls were selected from the pool of children not identified by any screening criterion (Kovlin et al., 1977).

Interviews were conducted with parents of all children in the sample using a combination of structured, closed interviewing techniques and semi-structured, open-ended interviewing techniques. A wide range of social and family information was obtained during the interview. Sociodemographic data included extent of mother working, occupational class, number of children, and the family's level of contact with social services. Mothers completed a 12-item questionnaire designed to measure sociability towards neighbors, resulting in a "neighborliness" score. Mothers also completed a 30-item General Health Questionnaire developed to identify respondents with minor depression and anxiety states. Families were assigned a "social problem" score that was the summation of a number of defined, possible adverse, social and family experiences. Family experiences and events such as poor work record of the father or separation of parents were equally weighted and summed (Kovlin et al., 1977).

During the interview, mothers were also asked about the target child, such as whether the child liked school (5-point rating scale) and whether the child was having school problems. Parents were also asked to complete a child behavior rating scale designed for parents (Rutter et al., 1970) . Using a 5-point rating scale, parents also rated their use of each of three techniques of management or discipline: deprivation of privileges, physical punishment, and reasoning.

Each criterion group was compared to controls in examining the relationship between family variables and the child's identified difficulties. The group of children identified by the reading criterion, when compared to controls, were from families showing a significant excess of social problems. Further examination of these families indicated that they (a) had been in contact with social services, (b) had high social problem scores, and (c) had six or more children. Occupational skill level of this group (semiskilled or unskilled) was lower than that of the control group, and fewer mothers in this group were working at all. Kovlin et al. (1977) suggested that "poorer social and domestic competence" as a possible explanation of fewer working mothers in the reading criterion group. These mothers also reported more symptoms of psychiatric disturbance and a trend toward poorer socialization (ie., lower "neighborliness" score) than did control group mothers.

Parents of children with reading difficulties showed awareness of their child's school problems; over 60% of them stated that their children did not like school compared with 30% in the controls; and over 60% regarded their children as having school problems as compared to 10% of the controls. Parent reports of children's behavior yielded significantly higher mean scores in terms of antisocial and total behavior problems. This same group of parents reported more frequent use of physical punishment than controls (60% vs. 20%) and significantly less use of reasoning (Kovlin et al., 1972).

In addition to the reading criterion group, social and family conditions in other criterion groups were each compared with the control group. The pattern of differences from the controls was roughly similar for the reading behavior and rejection groups, although the differences from controls did not always reach statistical significance. Closer examination of maternal factors showed that mother's mental state differed significantly from controls for the reading and behavior groups; the rejection and isolation groups differed significantly from controls with regard to mother's "neighborliness." The cluster of differences in social and family correlates that appeared for the isolation group lead researchers to suggest that mothers of these isolated children were themselves isolated, i.e., significantly fewer worked and a significant percentage were more socially isolated than controls (Kovlin et al., 1977).

Another major finding from Kovlin's study is of particular relevance to the present study. The multiple screen procedure allowed for a child to be identified by more than one screening criterion, and for this reason criterion groups were compared only to the control group. This procedure, however, permitted examination of the number of obtained screens per child in relation to data gathered from parents. Results indicated that the more screening criteria by which a child was identified, the greater the number of adverse social and family conditions. Significant family differences were found between groups formed on the basis of the number of child criteria screens obtained (i.e., 0, 1, 2, 3 or more). Group differences were strongest for four variables: family size, social problem score, parent/sibling contact with social services, and parents use of reasoning in disciplining their child. When tested for linearity, each variable yielded a statistically significant gradient. Parent's perception of their child as having school problems and parent behavior ratings of their child also resulted in a significant linear gradient, as children were increasingly identified by more screening criteria.

Kovlin et al. (1977) concluded that children who exhibited multiple problems, as identified in their study, were likely to have families with a greater number of adverse social problems and background factors. The family's social problem score was most powerful in distinguishing among criterion groups and among groups formed on the basis of the number of identified child difficulties. Evidence provided by this study strongly suggests the cumulative nature of the influence of adverse family conditions on children's learning and behavior problems, and emphasizes the need to investigate multiple family environmental factors in order to better understand specific school-related difficulties.

The final study to be discussed with regard to learning disabilities provides additional support for examining family factors in the study of reading difficulties. In an earlier section, the epidemiological study conducted by Rutter and his associates was discussed in detail. Following the same procedures, Rutter, Yule, Quinton, Rowlands, Yule, & Berger (1975) found reading difficulties in 10-year-old children (as measured by SRA group reading tests) to be nearly three times as prevalent in the inner London borough (ILB) than in the semirural Isle of Wight (IOW). The inner city children had a unusually high rate of reading problems even after the effects of intelligence had been particled out (Rutter, Yule, Quinton, Rowlands, Yule, & Berger, 1975).

Searching for an explanation of these regional differences, the researchers examined the information obtained from the family interviews, which were most often conducted with the mother. In the ILB, psychiatric disorder in the mother, and in both the ILB and the IOW, large family size (five or more children) was associated with specific reading retardation (ie., observed reading score two or more standard deviations below the expected score). In both areas, there was a tendency for reading retardation to be less common in the families of non-manual workers, holding clerical, managerial, or professional jobs (Rutter, Yule, Quinton, Rowlands, Yule, & Berger, 1975).

Taken together, the studies investigating the family correlates of children's reading attainment suggest a number of family environmental factors that may have a influencing role in the development of children's reading difficulties.

Language difficulties. There is general agreement that a strong relationship exists between oral communicative competence and progress toward successful beginning reading (Otto, McMenemy, & Smith, 1973). Language plays a vital role in learning and consequently learning disabilities and deficits in language development are often interrelated (Lerner, 1971). Many school-age children suffer from some form of language disorder and in many cases the cause of the disorder remains undetected (McGrady, 1968).

In an effort to uncover some of the possible etiological clues to language difficulties, researchers have investigated a number of family characteristics that seem to influence the growth of language. These include family structure, children of multiple births, and social class. Each of these possible sources of variation in language development will be briefly discussed.

A number of large scale studies have shown that children from large families have lower scores on tests of vocabulary and verbal intelligence than do children with one or two siblings, and this association remains after controlling for social class (Douglas, 1964; Douglas, Ross, & Simpson, 1968; Rutter, Tizard, & Whitmore, 1970). Moreover, Douglas et al. (1968) found that children's vocabulary scores fell as the number of preschool children in the family increased, suggesting that young siblings are more likely to interact and communicate with each other than with adults whose language is richer and more varied. Friedlander (1971) offers another possible explanation for the association between family size and language skills. By studying tape recordings of family conversations at home, it was evident that the presence of siblings lead to a kind of "linguistic chaos," perhaps making language acquisitions more difficult in large families (Rutter & Mittler, 1972).

Multiple births represent a special case of family structure that is associated with language delay. Twins and triplets start speaking several months later than singletons (Day, 1932; Howard, 1964) and characteristically make more use of nonverbal forms of communication, ie., gesture and mime. Delay in spoken language for children of multiple births persists throughout the preschool years and during the school years, the language deficit is apparent in tests of verbal intelligence when compared to singletons (Rutter & Mittler, 1972). Mittler (1970) compared 200 twins with 100 singleton controls, all of the same age (4 years) and social status. Using the Illinois Test of Psycholinguistic Abilities, twins' scores showed an average delay of 6 months in language development. Analysis of ITPA profiles were unremarkable and the results were explained in terms of overall immaturity of language development. Both the Day (1932) and Mittler (1970) studies found nonverbal intelligence scores of twins to be average or above average. Interestingly, twins in middle-class homes appeared to be more vulnerable than twins in working class families, with twins from the higher social class showing a greater language delay when compared to singleton controls of the same social class.

Increased risk of perinatal insult and genetic factors are likely to play a role in the determination of language development in twins, but according to Mittler (1969), nongenetic factors are probably more important in language development than in the development of general intelligence. In support of this notion, Record, McKeown, and Edwards (1970) found that the verbal intelligence of twins whose co-twin was stillborn or died in early infancy, was only 1/2 point below that of singletons. Reduced parent-child interaction and increased contact with co-twins providing less sophisticated verbal stimuli have been offered as possible explanations of this phenomenon.

Various studies have documented the relationship between low social class and language difficulties (Bullock, 1975; Deutsch, 1965; Templin, 1957). In general, social class differences in early language development appear small (ie., age of starting to speak, speed of development of syntactic competence), but as children are required to use their language skills to make academic gains, the child of the working class family is at particular disadvantage. These social class difficulties in language usage remain even after general intelligence has been taken into account (Rutter & Mitler, 1972).

Differences in language usage by social class are most marked with respect to abstract functions and to the way language is used (Hawkins, 1969). Middle-class children seem to be more specific and intelligible without relying on the immediate, in contrast to lower-class children who seem to be less explicit and more fully understandable in context. Similarly, researchers have found middle-class families more often use language to express ideas and concepts and they do it in a way that is more precise, clearly suggesting a link between the way in which parents talk to their children and their children's skills and style of language usage (Brandis &

Henderson, 1970; Bullock, 1975; Hess & Shipman, 1965; Robinson & Rackstraw, 1967).

In summary, a variety of family environmental correlates of language difficulties have been reported. There are consistent family configuration and social class differences reported in the use of higher order language functions. The intensity and quality of verbal interaction appears to be a behavioral correlate of social class, which is itself a crude indicator of environmental stimulation. Bullock (1975) points out that the critical focus is the language environment of the growing child, and particularly the role played by language in his relationship with his mother. Bernstein (1965, 1971) has been a predominant figure in the investigation of language processes in family environments and his work will be discussed in a later section of this review.

Other Studies

The association between family characteristics and child performance has been documented by a number of other studies. In a comprehensive review of the relationship between family configuration and children's intellectual abilities and achievement, Cicirelli (1978) made the following conclusions: (a) ability and achievement decrease as family size increases; (b) ability and achievement decrease as birth order position increases; (c) ability and achievement decrease as spacing between siblings decreases; and (d) there is some evidence for a developmental trend in the effects of family structure. Additionally, Cicirelli emphasized the interaction effect among sibling structure variables, e.g., age spacing, birth order, ordinal position, and suggested that the effects of sibling structure variables may depend at least in part on the family's particular cultural setting and general social situation. The role of the family's cultural and social context in relation to family configuration was examined by Page and Grandon (1979) and Valencia, Henderson, and Rankin (1980). In both studies, ethnicity and socioeconomic status accounted for a significantly greater amount of the variance in children's intellectual functioning than did family size and sibling spacing.

Socioeconomic status has consistently accounted for a substantial portion of the variance in children's intellectual functioning and academic achievement (Henderson, 1981). Riccuiti (1977) points out that consistent differences in children's developmental outcomes are also associated with relatively small variations in socioeconomic status within very low-income populations, particularly in developing countries. Klein, Yarbrogh, Lasky, and Habicht (1972) studied large samples of 3- to 6-year-old children in four very poor Guatemalan villages and reported consistent positive correlations between measures of language, memory, and perceptual functions, and a weighted composite index of family socioeconomic status (correlations ranged from .2 to .4). This index was based on the quality of housing, father's occupation, mother's dress (whether or not manufactured), some teaching of children by family members, and social contacts outside the home, all information obtained as part of a home interview. These same researchers reported similar correlations for a sample of 24-month-old children (Klein et al., 1974). Variations in quality of housing (size, cleanliness, construction materials) were associated with differences in children's mental and motor development scores.

Similar results were reported by Christiansen, Vuori, Mora, and Wagner (1974) in a study of children age 6 to 30 months living in a poor urban neighborhood in Bogota, Columbia. They obtained significant correlations between Developmental Quotients on the Griffiths Test and the following family environmental indicators: general socioeconomic status (correlation of .34), mother's literacy (.30), and sanitary conditions (.37). When these factors were combined, the multiple correlation with Griffiths DQ was .43 (Christiansen et al., 1974).

Although Riccuiti (1977) cautions against dismissing observed social class differences as simply a myth, he emphasizes that the more important task is one of understanding the developmentally salient features of such environments and how they influence development. Research efforts with this goal in mind will be the topic of discussion in the next review section.

Summary

A substantial body of research has revealed a number of family characteristics that are correlated with children's learning and behavior problems. Major epidemiological studies conducted by Heber in the U.S. and Birch in Scotland identified general aspects of the physical and psychological milieu created by families that were associated with mild mental retardation in children. Comprehensive studies by Richman and Rutter revealed certain family environmental factors that increase the likelihood that a child will exhibit serious behavior problems. Environmental correlates of children's learning disabilities were examined by Werner on the Island of Kauai, and other researchers have added to the evidence suggesting the influence of family factors in children's reading attainment and language development. Additional child studies have reported sociodemographic variables, particularly family configuration and socioeconomic status variables, which were related to ability and achievement among nonhandicapped children. Taken together, these findings support the notion that certain identifiable characteristics of family environments are somehow linked to children's learning and behavior problems.

Descriptive Studies: Family Processes

Much of the research on the family environment and its role in the development of children's intellectual functioning, academic achievement, and affective development has relied on global social status indicators such as family configuration and socioeconomic status to account for variations in child performance. Measures of socioeconomic status consistently explain statistical differences in intellectual performance that cannot be attributed to genetic factors or to genetic-environmental correlations (Henderson, 1981). The predictive power of socioeconomic status is, according to Lavin (1965), due to the fact that it is a summarizing variable describing a set of values, attitudes, and motives related to academic performance. As described by Deutsch (1973), socioeconomic status includes, "neighborhood of residence; value placed on education; proportion of income spent for food, housing, and entertainment; typical leisure-time activities; amount of reading done and nature of reading matter; and the like as well as child-rearing practices (p. 240)."

The usefulness of socioeconomic status as an explanatory construct is limited precisely because it is a summarizing variable, which masks the considerable range of variation among characteristics within a given socioeconomic status group, and which fails to reflect the dynamics of the environments that families create for their children. As a result, much of the family environmental research has had little functional or diagnostic value for counselors or educational administrators (Henderson, 1981; Marjoribanks, 1979). Both Hess (1970) and Deutsch (1973) have long emphasized the need to move beyond sociological ratings of social class to analyses of such things as the type and complexity of language in the home, and the amount and type of intellectually stimulating experiences and academic help provided to the child.

A number of investigators have attempted to examine the family environment in terms of the specific processes that differentiate between facilitative and nonfacilitative environments for children's cognitive and social development. Identification of the differentiating features of the child's family environment is more likely to suggest variables that can be manipulated in educational programs, in an effort to make family learning contexts more beneficial for children (Marjoribanks, 1979). Measurement of family environmental process variables that are associated with variations in child performance has been pursued predominantly with children functioning within the "normal" range of development and with children considered to be "culturally deprived" or "disadvantaged." More recently, attempts have been made to expand this area of investigation to include families of children with identified handicaps. Representative works from the normal and handicapped child development literature will be reviewed, including the researchers' major theoretical constructs, methodology of particular relevance to the present study, and major findings.

"Normal" Child Studies

Studies investigating aspects of the family environment as they affect the development of child competencies within the normal range are relevant to the present study for two reasons: first, specific family environmental processes that have been identified as effective means of promoting child development may also suggest conditions for less than optimal development when they are absent or somehow reduced in effectiveness; and, second, family processes that promote child development may also be considered as potentially mitigating influences in the presence of more deleterious family conditions.

Much of the impetus for educational research on family environments was provided by Bloom (1964), who suggested that the environment be regarded as a network of persisting environmental forces that surround and play on the individual. He also hypothesized that any particular human characteristic is related to a subset of the total set of environmental forces, and that in order to discover meaningful relationships between the environment and behavior, specific environmental measures should be related to specific human characteristics. Bloom was influenced by the work of Murray (1938) who, in the development of a theory of personality, proposed that the environment be characterized by the kinds of benefits or harms that it provides. The implications for a directional tendency of the environment was designated as the "press" of the environment. Each press was defined as having: (a) a qualitative aspect which is the kind of effect that the environment has or might have on the individual; and (b) a quantitative aspect assessed by the variation in power that an environment has for either harming or benefiting different individuals, or the individual at different times. From Murray's early conceptualization of environmental press variables, two schools of family environment research emerged: the "Chicago" and "British" schools (Marjoribanks, 1979).

The "Chicago" School. The "Chicago" school was lead by the work of Dave (1963) and Wolf (1964) who examined the relationship between the family environment and children's academic achievement and intelligence. Both investigators used the same sample of 60 children (28 boys, 32 girls; mean age = 11 years), selected from 19 schools from one system in Illinois. The approach adopted by these two studies was to first hypothesize the environmental press variables related to a specific area of child performance, define these press variables by sets of social-psychological process variables, and then assess the process characteristics through measures of specific behaviors or attitudes within the family.

Dave (1963) hypothesized a subenvironment of the total set of conditions and processes that comprise the family environment, which he labeled "educational environment of the family." Six environmental process variables were hypothesized to be related to academic achievement:

1. Achievement press - goals and aspirations parents hold for themselves and their children; interest in educational achievement reflected in knowledge of child progress; plans for children's educational attainment; educational and employment status of close friends and relatives.

2. Language models - quality of parents' own language, such as vocabulary skills and verbal fluency; awareness of children's use of language and efforts to influence use of correct grammar.

3. Academic guidance - amount and quality of guidance on school-related matters, such as encouragement of pre-reading and reading skill development; using daily activities to teach and reinforce cognitive skills.

4. Activeness of the family - extent and content of children's exposure to a wide range of environmental stimulation and opportunities for learning; nature and amount of child and family participation in activities such as reading, watching TV, visiting libraries and other cultural centers;

5. Intellectuality in the home - types of toys and games made available to the child; types of hobbies pursued by child and family; opportunities for problem-solving and creativity;

6. Work habits in the home - level of organization and use of routines in managing home responsibilities.

These six press variables were defined by 21 process characteristics, each process characteristic rated on a 9-point scale. A semi-structured interview schedule was developed to obtain information from mothers that would allow the interviewer to rate each process characteristic. Scores were obtained for each press variable by averaging the ratings on the relevant process characteristics and an index of the educational environment of the family was calculated by summing the scores on the six press variables. The Metropolitan Achievement Tests were used to assess children's academic achievement. When the family process variables were combined into a predictor set, they were differentially related to academic subsets. Process variables accounted for over 50% of the variance in scores for word knowledge, reading, and arithmetic problem-solving, and over 40% of the variance in scores for word discrimination and language. Thirty-one percent of the variance in arithmetic computation was accounted for by the process variables and for spelling, 37%.

A noteworthy finding in the Dave (1963) study was that the order of importance of the predictability of the six process variables differed from subtest to subtest. Results of the stepwise regression analysis showed that achievement press was the most important variable in predicting word knowledge and reading, while for arithmetic problem-solving, the most important variable was intellectuality of the home. These results suggest the plausibility of subject-specific environmental process variables, a position advanced by Bloom (1964) who recommended the study of specific environmental measures to specific human characteristics.

Using the same sample of children and mothers, Wolf (1964) examined the relationship between children's intellectual functioning and three environmental press variables: press for achievement motivation, press for language development, and provisions for general learning. Using a similar semi-structured interview format, mothers responded to questions that allowed the interviewer to rate each process characteristic on a 7-point scale, and then calculate a summation score for each press variable. When combined into a predictor set, the three environmental press variables accounted for 49% of the variance in children's intelligence test scores, as measured by the Henmon-Nelson Tests of Mental Abilities (Wolf, 1964).

Studies similar to the Dave (1963) and the Wolf (1964) studies have been conducted in other cultural settings. Using Dave's family environment measure, Dyer (1967) investigated the relationship between press variables and the intelligence and achievement of two groups of 11 year olds in Trinidad ($N_1 =$ 15 boys, 15 girls of middle social status; N_2 = 15 boys, 15 girls of lower social status). Forty-five percent of middle-class children's total achievement (Iowa Test of Basic Skills) was accounted for by the family environment measure. Interestingly, the family measure accounted for 61% of the variance in the total achievement scores of lower class children, suggesting the family environment was a more salient influence on achievement in this socioeconomic group. In a study of 8-year-old Irish children (N = 30 boys, 30 girls) from a socially disadvantaged area of Dublin, Kellaghan (1977) found that Dave's measure accounted for moderate to large percentages of the variance in scores on tests of arithmetic (30%), Irish reading (36%), and English reading (40%). In both the Dyer (1966) and Kellaghan (1977) studies, environmental press variables accounted for less of the variance in intelligence test scores than in achievement scores, with variances consistently low across a range of intelligence measures, including the Lorge-Thorndike Test, the Stanford-Binet Scale, and the Cattell Tests.

Mosychuk (1969) and Marjoribanks (1972) moved beyond measures of global intelligence and investigated the relationship between family environments and sets of ability measures. In a study of 11-year-old Canadian boys (N = 100), Mosychuk (1969) studied scores on the Wechsler Intelligence Scores for Children (WISC) and 10 aspects of the family environment. From a structured interview conducted with mothers, ratings were obtained for 10 process characteristics:

1. Academic and vocational aspirations of the parents;

2. Knowledge of and interest in the child's academic and intellectual development;

3. Material and organizational opportunities for the use and development of language;

4. Quality of language in the home;

5. Female dominance in child rearing;

6. Planfulness, purposefulness, and harmony in the home;

7. Dependency-fostering overprotection;

8. Authoritarian home;

9. Interaction with physical environment; and

10. Opportunity for and emphasis on initiating and carrying through tasks.

Results of factor analysis on these 10 measures yielded four factors or press variables labeled: aspirations- planfulness-harmony; authoritarian-overprotection; activity-environmental interaction; and female language. The first environmental factor was moderately related to WISC verbal, performance, and full scale scores, with low to negligible associations between the other environmental factors and WISC scores. Further analysis of the 10 WISC subtest scores resulted in four factors defined as reasoning, general memory, verbal-symbolic, and perceptual-motor-spatial. A significant canonical correlation of .57 was obtained between the four environmental press variables and the four WISC factor scores (Mosychuk, 1969).

Marjoribanks (1972) also studied the relationship between family environments and children's scores on a set of mental ability tests. Eleven-year-old boys (N=500) from Ontario, Canada, were assessed using the California Test of Mental Maturity and the SRA Primary Mental Abilities Test. The boys were classified as either middle or lower social status, based on an equally weighted combination of the occupation of head of household and a rating of his/her education. Two parallel pools of boys were formed and in the event that parents from the first pool did not agree to participate, alternate families could be drawn from the second pool. The final sample consisted of 180 boys, 90 classified as middle social status and 90 classified as lower social status.

Following the theoretical orientation of previous researchers, Marjoribanks postulated eight environmental forces to be related to mental abilities: (a) press for achievement; (b) press for activeness; (c) press for intellectuality; (d) press for independence; (e) press for English; (f) press for a second language spoken in the home other than English; (g) mother dominance; and (h) father dominance. Each of these environmental forces was defined in terms of a set of environmental characteristics which were assumed to be the behavioral manifestation of the environmental forces. For example, press for intellectuality was defined by three environmental characteristics: number of thought-provoking activities engaged in by children; opportunities made available for thought-provoking discussions and thinking; and use of books, periodicals, and other literature. A semi-structured interview schedule was constructed to elicit responses from parents that would allow the interviewer to rate each item on a 6-point scale. The score for each of the environmental characteristics was obtained by summing the scores on the relevant environmental items, and the score for each of the environmental forces was obtained by summing the scores on the relevant environmental characteristics. Both parents participated in the interviewing sessions that lasted approximately two hours (Marjoribanks, 1972).

Results obtained from examining the scores on the mental ability tests and environmental press scores indicated that most of the relationships were statistically significant. Regression analyses revealed that the eight press variables were associated with 50% of the variance in verbal and number ability scores, 16% of the variance in reasoning scores, and only 7% of the variance in spatial ability scores. Spatial ability was not related to press for independence, and spatial ability and reasoning scores were not related to father or mother dominance.

Further analysis was conducted in order to assess the relative contributions of the press variables and global social status and family structure characteristics (Walberg & Marjoribanks, 1973). Global environmental characteristics included in the analyses were father's and mother's education, father's occupation, number of children, crowding ratio, and the target child's ordinal position. Canonical correlations were computed between the four mental abilities scores and measures of both global variables and environmental press variables. Results indicated that the first two canonical correlations were statistically significant. The first canonical variable indicated that verbal and number abilities and, to a lesser extent, reasoning ability, were more closely associated with the environmental press variables than spatial ability. Examination of the second canonical variable revealed that social status indicators and press variables were significantly related to differentially developed mental abilities. In particular, high scores on verbal, reasoning, and spatial abilities were associated with high ratings on press for English, father's occupation, press for a second language, and to a lesser extent, press for activities and father dominance. The researchers noted that the two language press scales particularly reflect the parent-son interaction in activities such as reading, conversations after school and during meals, purposeful teaching of vocabulary, and the correction of errors in language usage. Parent-son involvement in both academic and nonacademic situations is reflected in both the press for activeness and father dominance. Results of the study suggested that the development of verbal, reasoning, and spatial abilities as compared to number abilities may be facilitated in homes where there is a high degree of parent-son interaction, a finding which is consistent with other research reporting close mother-son relationships associated with boys' verbal ability (Bing, 1963; Honzik, 1967). High expectations for independence (ie., less involvement with parents) have also been associated with high numerical ability (Bing, 1963; Ferguson & Macoby, 1966).

Studies of the Chicago school presented up to this point indicate that it is possible to move beyond global descriptions of family environments (e.g., occupation, family size, crowding, etc.) and assess the family environment in terms of social and psychological press variables that have been significantly related to children's cognitive functioning and academic achievement. This school of researchers also examined the relationship between family environmental variables and children's affective characteristics, most notably the work by Weiss (1969, as cited in Marjoribanks, 1979), Keeves (1972), and Marjoribanks (1979). Weiss (1969, as cited in Marjoribanks, 1979) examined the relationship between the family environment and measures of children's achievement motivation and self-esteem. The affective characteristics of 11-year-old children (N=27 boys, 29 girls) were assessed by means of a self-report measure, a rating by the child's current teacher, and a projective technique. Achievement motivation of the family environment was defined by three press variables: generation of standards of excellence and expectations, independence training, and opportunities for self-enhancement. Three other press variables were hypothesized as influences on children's feelings of self-esteem: parental acceptance, evaluation of the child, and opportunities for self-enhancement. An interview schedule completed with parents yielded scores for each family environmental press variable. Data analysis indicated that the relationship between the family environment and children's affective characteristics depended upon the criterion used. Achievement motivation measured by the teacher rating (boys only) and the projective technique, and self-esteem measured by self-report (girls only), the teacher rating, and projective technique (boys only), all were significantly associated with the affective subenvironment tapped by Weiss's family environment measure (Weiss, 1969, as cited in Marjoribanks, 1979).

Keeves (1972) investigated the relationship between the family environment and measures of children's scientific and mathematical achievement, and their attitudes toward science and mathematics. Parent interviews were conducted to tap five attitudinal and four environmental process variables. The attitudinal variables were: father's and mother's attitudes toward the child's present education; father's and mother's ambitions for the child's future; parents' education and occupation; and parents' hopes and aspirations for themselves. The environmental process variables were: relations between home and school; use of books and library facilities; provision of help with formal school or work; and arrangements made for tackling home assignments. An environmental press score for achievement motivation and for self-esteem were constructed using principal components analysis. When combined into a predictor set, they accounted for 34% of the variance in children's mathematics scores and 35% of the variance in science scores. Environmental press variables had lower associations with children's attitudes toward these same subject areas (Keeves, 1972).

Marjoribanks (1979) also examined the family environment as it related to children's affective characteristics and cognitive abilities. Twelve-year old Australian children (N=130 boys, 120 girls) were administered a test of general intellectual ability and two different scales designed to assess a number of school-related affective characteristics. Following the methodology of his earlier work, Marjoribanks formed two parallel pools of From these pools, families agreeing to participate were interviewed using an interview schedule (adapted from a previous instrument) that assessed six press variables: (a) parent's expectations for the child; (b) expectations for themselves; (c) concern for the use of language within the family; (d) reinforcement of educational expectations; (e) knowledge of the child's educational progress; (f) and family involvement in educational activities.

The structure of the six press variables was examined using principal components analysis, and resulted in six factor scales. This same procedure was used to analyze children's affective responses and produced seven factors (affective characteristics) defined as enthusiasm for school, academic self-concept, dislike for disruptive behavior, educational and occupational aspirations, commitment to school, and academic orientation. When the six environmental factors were combined into a predictor set, they were differentially associated with children's affective characteristics. The largest percent of variance accounted for by the press variables was for measures of girls' academic self-concept (13%); boys' dislike for disruptive behavior (11%); educational and occupational aspirations (boys=19%; girls=13%); and girls' commitment to school (13%). Environmental factors were also differentially related to measured intelligence, accounting for 19% and 11% of the variance in scores for boys and girls, respectively (Marjoribanks, 1979).

In summary, findings from the Chicago school of family environmental research suggest that, in general, process measures of the family environment yield moderate to high relationships with academic achievement, low to moderate relationships with intelligence test scores, and negligible to moderate relationships with measures of children's affective characteristics. Differential predictability among environmental variables in these studies has been attributed to difficulties in identifying and measuring meaningful aspects of family environments and in assessing children's affective characteristics (Marjoribanks, 1976, 1979).

The British School. Paralleling many of the efforts of the Chicago school, another set of researchers in Great Britain was investigating the role of the family environment in children's development. One of the earliest studies was conducted by Fraser (1959) who examined 12- to 15-year old children's (N=427) measured intelligence and achievement in relation to specific aspects of the family environment. Cultural, material, motivational, and emotional aspects of children's homes were tapped using a family environment interview schedule, less detailed than those developed by the Chicago school. Fraser's (1959) analyses indicated significant relationships between a number of family variables and children's performance on measures of intelligence and achievement, although the relationships were consistently greater between environment and achievement variables. Reading habits of the family accounted for 11% of the variance in achievement; parents attitudes toward education and future occupation of the child and achievement, 15%; and impression of the home and achievement, 21% (Fraser, 1959).

Wiseman (1967, as cited in Marjoribanks, 1979) also investigated aspects of the family environment that were associated with 11-year-old children's (N=186) intellectual functioning, arithmetic, and English. Combining these measures into a total achievement score, Wiseman found seven family variables of significance in accounting for children's achievement: parent's preferred age for leaving school (17%); child's reading (12%); parent's library membership (12%); parent's preference for grammar school (10%); whether parents read (8%); number of books in home (7%); and (few) complaints against teacher (6%). Wiseman emphasized the significance of four variables in the "top 7" that dealt with reading (Wiseman, 1967, as cited in Marjoribanks, 1979).

The Plowden survey, an internationally known study of a large sample of English children, also examined family environmental correlates of children's cognitive and academic skills (Plowden, 1967). Three age cohorts were formed through a stratified random sampling procedure: children in the "junior" cohort averaged 7 years of age (N=1,053); "middle" cohort, 8 years of age (N=1,016); and "senior" cohort, 11 years of age (N=1,023). Fourteen environmental press variables were identified by factor analysis of 80 attitude and behavior items obtained through survey interviews (Peaker, 1967). When these press variables were combined into a predictor set, they accounted for 26% of the variance in boys' and 22% of the variance in girls' reading scores in the junior cohort; 20% of the variance in boys' and 10% of the variance in girls' reading scores in the middle cohort; and 45% of the variance in boys' and 32% of the variance in girls' reading scores in the senior cohort (Peaker, 1967). These results suggest the differential influence of family environments on children at different stages of development and learning.

Four years after the original Plowden survey, senior cohort children and their families were interviewed again. Marjoribanks (1974) conducted an analysis of the Plowden data to examine the relationship between children's family environment and their cognitive, academic, and affective characteristics at the time of the original survey and in the follow-up survey. In the latter survey, children's abilities were measured using the Alice Heim General Intelligence Test, the Watts-Vernon English Comprehension Test, and the Vernon Graded Mathematics Test. Children's educational and occupational aspirations and their "locus of control" (sense of control over the environment) were measured using two scales developed for the study.

In both the initial Plowden survey and the follow-up survey, a structured interview schedule was used to obtain information about the children's family environments. Marjoribanks (1974) used factor analysis techniques to construct environmental press variables from the survey information. Further analysis yielded two family environment factor scores, each composed of the sum of scores on the relevant environmental press variables. These family scores were associated with greater variance in achievement test scores than in intelligence test scores. Specifically, family environment scores accounted for a significant percent of the variance in scores for boys' English (29%) and girls' English (24%); boys' mathematics (20%), and girls' mathematics (25%); and boys' aspirations (20%) and girls' aspirations (23%). Also, family scores were somewhat related to children's locus of control scores although it should be noted that parents' locus of control was not specifically measured, whereas parents' aspirations for their child, for example, were included in the parent interview schedule.

Thus, findings from another group of investigators support the hypothesis that important family environmental processes can be identified and measured through carefully developed parent interview schedules. Results also suggest sex and age differences in the salience of environmental influences, i.e., children of different ages and/or gender are differentially influenced by environmental influences. Additional support for Bloom's (1964) notion of "subenvironments" is provided by apparent differences in the strength of child-environment relationship for intelligence, achievement, and affective characteristics and by findings of subject-specific environmental influences.

Caldwell's home environmental processes. Caldwell and her associates have conducted a series of studies of home environmental influences on young children's cognitive development (Bradley & Caldwell, 1976a, 1976b, 1978; Bradley, Caldwell, & Elardo, 1977; Elardo, Bradley, & Caldwell, 1975, 1977). Based on an analysis of the theoretical and empirical literature concerning environmental influences on child development, Caldwell posited specific features of the home environment likely to foster early development (Caldwell, 1968, as cited in Henderson, 1981, pp. 14-15):

> 1. Gratification of basic physical needs and careful provision for the child's health and safety;
>
> 2. A relatively high frequency of adult contact with a relatively small number of adults;
>
> 3. A positive emotional climate that promotes the child's trust of himself and others;
>
> 4. An optimal level of need gratification;
>
> 5. Varied and patterned sensory input, with an intensity range that does not overload the child's capacity to receive, classify, and respond;
>
> 6. Interaction with people who are physically, verbally, and emotionally responsive; responses clearly providing clues regarding valued and appropriate behaviors; reinforcement of valued behaviors by caretakers;
>
> 7. As few as possible social restrictions on exploratory and motor behavior;
>
> 8. A well-organized physical and temporal environment, permitting expectancies regarding objects and events to be confirmed or revised;

9. Rich and varied cultural experiences; consistent persons in the environment to assist the child in interpreting these experiences;

10. Play materials that facilitate the coordination of the sensory-motor processes within a play environment that permits the child to utilize these processes.

11. Contact with adults who value achievement and who attempt to promote secondary motivational systems related to achievement in the child;

12. An appropriate match between cumulative experiences and the child's current level of cognitive, social, and emotional organization.

Based on this list, an instrument known as the Home Observation for Measurement of the Environment (HOME) was developed and standardized by Caldwell, Heider, and Kaplan (1966). The HOME inventory was designed to provide an index of the quality and quantity of social, emotional, and cognitive support available within the home setting of children under 6 years of age. It is composed of six subscales: emotional and verbal responsibility of the mother; avoidance of restriction and punishment; organization of the physical and temporal environment; provision of appropriate play materials; maternal involvement with the child; and opportunities for variety in daily stimulation. Scoring of the 45-item inventory is partly based on observation and partly on answers to a semi-structured interview conducted in the home at a time when the target child can be observed in interaction with the mother or primary caregiver. Parental report constitutes about 1/3 of the items, in order to cover certain important transactions not likely to occur during the visit (Caldwell et al., 1966). All items are scored in a binary fashion (yes or no) and are phrased so that the total score equals the number of yes responses checked by the interviewer. The HOME requires a visit of approximately one hour. Evidence has been provided for the reliability and validity of the HOME (Bradley & Caldwell, 1978; Elardo et al., 1975, 1977).

Elardo et al. (1975) investigated the relationship between subscales of the HOME and infants' scores on the Mental Development Index (MDI) of the Bayley Scales of Infant Development at 6 and 12 months and scores on the Stanford-Binet Scale at 36 months of age. MDI scores for all infants were in the average range of cognitive functioning. Each infant's (N=77) home environment was assessed at 6, 12, and 36 months of age with the HOME. Results indicated that the subscales measuring organization of physical and temporal environment and opportunities for variety in daily stimulation had the strongest relationship to MDI scores at 6 months of age (correlations of .22 and .20 respectively). The multiple correlation between all six subscales and the 6-month MDI score was .31. The same general pattern of results was obtained between 6-month HOME scores and MDI scores at 12 months of age, with a multiple correlation of .54. Correlations between infants' 12-month HOME scores and 36-month Binet scores ranged from .24 to .56. The highest correlations with Binet scores were obtained for HOME subscales measuring provision of appropriate play materials (correlation of .56) and maternal involvement with the child (correlation of .47). The subscale tapping emotional and verbal responsibility also had a strong relationship to mental test performance (correlation of .39). In summary, the six HOME subscale scores obtained at 6 months of age yielded a significant multiple correlation with infants' Binet at 3 years of age. HOME scores measured at 12 months of age resulted in a multiple correlation of .59 with the Binet at age 3 years, and home environments assessed at 24 months of age yielded a multiple correlation of .72 with Binet scores at 3 years of age. Thus, the quality of stimulation available to the child at 2 years of age, as measured by Caldwell's scale, accounted for half of the variance in mental test performance one year later. Moreover, relationships between HOME scores and mental test scores were higher than the relationship between two mental test scores for the same children over the same time span (MDI and Binet test score correlations ranged from .28 to .41; Elardo et al., 1975).

Bradley and Caldwell (1976a) conducted a follow-up study of 49 of the children from the group of 77 analyzed by Elardo et al. (1975). In order to further examine the relationship between the quality of home environments and cognitive development the children, now 54 months of age, were again administered the Binet Scale. Results indicated that children in the follow-up sample were still functioning in the average range of measured intelligence. Binet scores were compared to HOME scores obtained when the children were 6 and 24 months of age. Four of the HOME subscales and the total HOME score obtained at 6 months of age were significantly correlated with Binet scores at 54 months of age resulting in a multiple correlation of .50. All HOME subscales assessed when the child was 24 months of age were significantly correlated to 54 month Binet scores, yielding a multiple correlation of .63 (Bradley & Caldwell, 1976a). Bradley and Caldwell (1976b) further examined the home environments of their original sample of children, this time focusing on the relationship between the HOME and increases and decreases in mental test performance from 6 to 36 months of age. In the first of three analyses, each of the 77 children was classified as either an increaser (N=10), a nonchanger (N=10), or a decreaser (N=17) on the basis of a substantial change (21 points higher or lower) in scores on their [illegible]-month MDI score when compared to their 3-year Binet score. A multiple discriminant analysis using the six HOME subscales as predictor variables was used in an effort to discriminate among the three groups on the basis of amount of stimulation available in the early home environment. This analysis revealed that it was possible to differentiate among the group that improved in mental test performance, the group that showed no substantial change, and the group that declined, on the basis of home environment scores. Analysis of the differences between the means for the three groups for each of the HOME subscale scores yielded significant univariate effects for the subscales measuring maternal involvement with the child and provision of appropriate play material (Bradley & Caldwell, 1976b).

In this same study, a second discriminant analysis was conducted, excluding from study those children with extremely high (>120) or low (<80) 6-month MDI scores in order to reduce the effect of changes due to regression to the mean and the effect of initial level of child performance (N=59). This analysis yielded an even stronger relationship between HOME scores and changes in mental test scores. Significant univariate effects were reported for subscales measuring maternal involvement with the child, provision of appropriate play materials, and organization of the physical and temporal environment. In the third analysis of these same data, a multivariate analysis of covariance was conducted with mental test score change as the classification variable, MDI score as the covariate, and the six HOME subscales as criteria. Again, this analysis yielded significant relationships between mental test changes and the HOME, and significant univariate effects for subscales measuring maternal involvement with the child, provision of appropriate play materials, organization of the physical and temporal environment, and opportunities for variety in daily stimulation. Bradley and Caldwell (1976b) concluded:

> Mental test score increases for infants, like mental test scores for older children, appear to be related to parents' acceleration and encouragement of intellectual development. Mothers whose infants improve in mental test performance not only encourage and challenge the child to develop new skills but also provide the child with the kind of play materials needed for development. By contrast, parents whose children decline in performance do a less adequate job of helping their infants organize the environment. (p. 96)

Elardo et al. (1977) reported an advancement of earlier work in an investigation of children's language development and the HOME inventory. Measurement of black and white children's home environments at 6 and 24 months of age was related to measures of the Illinois Test of Psycholinguistic Abilities (ITPA). HOME subscales measuring maternal involvement with the child, provision of appropriate play materials, and emotional and verbal responsivity of the mother showed the strongest overall relationship to language competence. ITPA subtests assessing auditory reception, auditory association, visual association, and grammatical closure were most strongly associated with the quality of stimulation available in the early home environment. Some age, sex, and ethnic differences were evident. The strength of the relationship between the HOME and ITPA scores changed over time; girls' HOME scores were more strongly related to certain ITPA subtests than boys'; and the relationship between the HOME and ITPA scores was not as strong for blacks as for whites (Elardo et al., 1977).

In summary, the findings of a series of studies by Caldwell and her associates have identified a number of home environmental processes, as measured by the HOME inventory, that consistently yield comparatively strong correlations with young children's cognitive development. Mothers who facilitate their young child's interaction with the environment in a meaningful and verbally responsive manner, who actively encourage achievement, and who address their child's emotional needs are more likely to have a child who exhibits a higher level of cognitive and communicative competency than mothers who do not interact with their child in this way. Findings of the Caldwell group also provide additional support for results reported by the Chicago and British schools of environmental research that specific family environmental processes show a generally stronger relationship to cognitive development than global descriptors of the environment, particularly socioeconomic status.

"Disadvantaged" Child Studies

The term "culturally disadvantaged" is commonly used to refer to subpopulations within the dominant culture that are subjected to severe economic and social disadvantage. Joseph (1972, as cited in Rutter & Madge, 1976) referred to disadvantagement as

> . . . circumstances which prevent people developing to nearer their potential -- physically, emotionally, and intellectually -- than they do now, which often shows itself in poverty, in emotional impoverishment, in personality disorder, in poor educational attainment, in depression and despair. (p. 3)

MacMillan (1977) views cultural disadvantagement as the learning experiences characteristic of certain environments that place a child at a disadvantage when he is competing in school or in the higher status occupations. In the U.S., disadvantagement has been linked to low-income populations and the minority groups that are disproportionately represented among low-income groups. Project Head Start, a massive early intervention program, was implemented on the basis of this association and on the notion that the early years of development are most important for influencing child development. Although the efficacy of Head Start is not without controversy, the program has made possible a major longitudinal study of the family environment and its role in children's development.

Shipman and her associates at Educational Testing Services (ETS), in conjunction with Project Head Start, investigated the interrelationships among status, situational, and process variables describing children's home environments, and the relationship between these family variables and children's performance across a number of developmental domains (Shipman, 1976; Shipman, McKee, & Bridgeman, 1976). A major premise of the study was that sociodemographic indices of the family environment (e.g., mother's education, occupation of head-of-household, income, family size) inappropriately assume homogeneity within and across groups, and inadequately characterize the type of stimulation available to the child in the home environment. The researchers' goal of "better understanding the influence of sociocultural determinants" was attempted through use of more fine-grained analysis of child-environment relationships (Shipman et al., 1976).

The ETS-Head Start Longitudinal Study was initiated in 1969 (Year 1 interview sample), at which time mothers were interviewed and children, 3-1/2 to 4-1/2 years of age, were tested prior to their enrollment in Head Start or any other preschool program. By 1974, the six-year longitudinal sample contained 1,017 children in the U.S. sites, approximately 1/3 of the original sample. During the first five study years, additional children were added who met age requirements and moved into target schools. The Year 6 interview sample included in the longitudinal study reported by Shipman et al. (1976) was comprised of 1,212 children and their mothers, all of whom had been interviewed and tested in Year 1. Seventy-one percent of the children were black; 53% were boys; 57% had enrolled in Head Start (92% black, 56% boys); 24% had attended other preschool programs (64% white); and 19% had no record of preschool attendance. The study was organized around an extensive array of data collection procedures, including a comprehensive parent interview, mother-child interaction measures, and child measures of cognition, personality, perception, creativity, academic achievement, and health, among others. Test batteries varied by target site and study year (Shipman, 1976).

Relevant characteristics of children's family environments to be obtained through parent interviews were classified as either process variables or status/situational variables. Process variables refer to various attitudes and dispositions of the family, as well as the patterns of interactions among family members selected on the basis of previous research suggesting their relevance for the young child's cognitive development. Specifically, the following process variables were investigated (Shipman et al., 1976):

1. Feelings of control over the environment - the degree to which individuals feel they can shape and direct their own future and the events which affect them; Rotter (1966) has referred to this dimension as internal-external locus of control or a sense of powerfulness-powerlessness; examples of parent interview items related to locus of control included a discrepancy between mother's aspirations and actual expectations for her child's educational attainment, and the mother's feelings of efficacy in discussing school problems with the principal;

2. Feelings of alienation - refers to the sociological dimension of participation-alienation; the degree to which a family participates in activities related to the child, school, community; examples of interview items related to this process were the number and nature of organizations the mother attends, mother's knowledge

7. Quality of attention demanded - degree of maternal reaction to child's inattentiveness, rated on a 4-point scale from high (prompt to reac) to low (no attempt to regain attention or unable to control child's attention); ratings were obtained during interaction sessions;

8. Teaching specificity - refers to verbal and nonverbal maternal teaching specificity during interaction tasks, including orientation to relevant task components, frequency and specificity of requests and instructions, and specificity of feedback;

9. Mother's verbal encouragement to reflect - the degree to which the mother made statements which encouraged the child to reflect upon or consider what was required before making a response; based on the actual frequency of such statements and a 4-point rating of mother's behavior on this impulsivity-reflectivity dimension during interaction sessions;

10. Differentiation of the environment: knowledge, attitudes, and beliefs - mother's degree of objective and subjective differentiation of the environment; interview items tapping this process included such things as depth of mother's knowledge about school programs and knowledge of child's specific strengths and weaknesses, interests, and hobbies;

11. Encouragement of school-related achievement and general cognitive development - reflected in numerous interview items such as educational aspirations for child; frequency of reading to child, helping with homework, visiting school; extent of child involvement in decision-making; whether learning/study is included in describing

a good student; availability of educational materials in the home; parental reading of books and newspapers and enrolling for additional school courses thereby modeling achievement/education-oriented behaviors.

The parent interview also contained items tapping various status and situational variables including traditional sociodemographic and family structure variables, home resources, family residential mobility, child's possessions, child's range of mobility, and potential "stress" conditions. In relation to the last variable, it was hypothesized that a number of family conditions may adversely influence the child's psychological environment and create a stressful living situation, including a high degree of family instability or frequent mobility; serious or chronic family illness; erratic employment history; depressing home surroundings and potentially hazardous neighborhood (e.g., located near a bar), and crowded conditions in the home.

Two parent interview schedules were developed by ETS for the longitudinal study: a 90-minute interview for the Year 1 data collection phase, and a shorter, 1-1/2 hour interview for Year 6 parent interviews. Mothers or primary caregivers were the targeted interviewees, based on the assumption that "the mother is particularly influential in transmitting to the young child behaviors and adaptations shaped by the environment (Shipman et al., 1976, p. 31)." The authors noted that the paucity of research concerning father-child influences reflected in part the practical problems of doing such research, and that mother's behavior, attitudes, and beliefs are likely to reflect the influence of her interactions with her husband and other family members. Thus, mothers or primary caregivers were interviewed in their homes by trained interviewers and a small honorarium was provided (Shipman et al., 1976).

Before presenting the results of the Year 6 data analyses, a description of the study sample is necessary. Of the 1,212 families, most fathers were employed in blue-collar jobs and parents on the average had approximately 11 years of schooling. In 36% of the families, fathers were absent and 18% depended upon public assistance for support. Fifty-nine percent of the mothers worked, and over half of these mothers had been employed for the three years the target child had been in school. A number of stressful conditions were evident: low income, shared beds, a high percentage of serious injuries to children, absence of medical examinations, and a family member with a serious chronic illness.

Although most mothers reported a good deal of involvement with their children, e.g., helping with homework, reading to them, taking them on shopping trips or visits, differences were apparent in mothers' expectations and evaluations of their children, and in their control strategies and disciplinary techniques. Participation in formal groups was generally limited and a substantial percentage of families never visited friends or relatives; more than a third reported never going outside of the home for entertainment. Participation in school-related activities was generally low, although over half the mothers had visited the school once that year for a conference or a PTA meeting. As noted above, the mother's feelings of an external locus of control were inferred from expressions of relatively high aspirations but lower expectations. Fifty-seven percent of the mothers wanted their child at least to graduate from college, whereas only 24% expected such attainments. Sixty-four percent reported wanting their child to complete at least two years of college, and only 32% expected such outcomes. Reasons offered for children not attaining aspired levels included insufficient motivation (35%), financial problems (28%), marriage (17%), and other interferences such as illness or military service (15%). A similar discrepancy between the parent's aspirations for the child and attainment was evident for the child's adult occupation: 59% said they wanted their child to have a professional or managerial career whereas only 37% actually expected such attainments.

In the first of many analyses, Shipman et al. (1976) examined the interrelationships among status, situational, and process variables. There was a moderately high degree of relationship among status and situational variables, with two exceptions: first, there was a consistent trend for correlations to be higher with parental education than with occupational status, indicating these indices were not interchangeable; and, second, father absence was not generally associated with other status or situational variables, except for indices of material resources. Expanding the examination of interrelationships, results indicated that less than 13% of the variance in any family process variable could be explained by any one of the status or situational variables. Low positive correlations were found between the status/situational variables and mothers' personal activities. The correlation between various status/situational variables and process variables was highest for mother's educational attainment and child's expected educational attainment (correlation of .53), suggesting the level of formal schooling attained by parents is an important correlate of the anticipated achievement level of the child (Shipman et al., 1976).

In general, a priori clusters of family process variables had low to moderate associations among themselves, indicating the diversity in attitudes and behavior assessed. It is noteworthy, however, that positive correlations were obtained between the groups of items representing the mother's alienation and feelings of powerlessness. The findings for the study sample indicated that feelings of optimism and efficacy were associated with greater knowledge and use of community resources and greater involvement in school and community activities. There were generally low correlations between family process variables and status/situational variables suggesting that much of the variation in family attitudes and behaviors was independent of variation in family status. Examples of process variables that were unrelated to status/situational characteristics were: frequency of mother's visits with family and friends, church attendance, and initiated meetings with school staff; maternal attitudes towards local school and feelings of efficacy in resolving school-related problems; frequency of assisting target child with homework and reading to child; and the mother's use of verbal rationale in response to her child's misbehavior. Analysis also revealed that there was only a slight tendency for lower status families to perceive themselves as less powerful or more dissatisfied. Indices of socioeconomic status, although reflecting differences in home resources, were in general marginally related or unrelated to the maternal attitudes and behaviors measured in the study (Shipman et al., 1976).

The ETS-Head Start study investigated the relationship between family status, situational, and process variables and children's performance in third grade on two measures of academic achievement (Cooperative Primary Tests - Reading and Math subtests) and a measure of analytic-perceptual ability (Ravens Colored Progressive Matrices). In the first analysis, data collected from the Year 6 parent interview was related to children's concurrent performance on these tests. Results indicated positive, and in general, moderately high relationships between status/situational variables and children's performance, with the highest correlations obtained for father's education (correlations ranged from .42 to .55), head-of-household occupation (correlations ranged from .35 to .47), and mother's education (correlations ranged from .38 to .45). With this low-income sample, the greater availability of material resources within the home was associated with children's higher scores. Family size was negatively related to children's performance (correlations of -.23, -.20, and -.16 with Reading, Math, and Raven scores, respectively) and there was a low association between father absence and performance. No significant relationship was evident between residential mobility or target child's ordinal position and the child's performance (Shipman et al., 1976).

Analyses of the relationship between family process variables and children's cognitive-perceptual scores yielded a number of significant positive correlations. The strongest relationship was observed between mother's aspirations and expectations for her child's educational attainment and the child's performance; correlations between aspirations and scores for Reading, Math, and Ravens scores were .39, .39, and .29 , respectively; and correlations between expectations and child performance were slightly higher, .49, .49, and .36. Additional interview information indicated that the mother's expectations for early independence and for assuming responsibilities, and her realistic appraisal of the child's present functioning appeared to facilitate the child's measured performance. Children's scores were positively associated with both indirect and direct indices of maternal cognitive stimulation, ranging from a correlation of .15 between newspaper reading and the Raven scores, to .30 between magazine reading and Reading scores. Mother's reported use of informative-interactive responses to her child's difficult questions was positively related to all three measures (correlations ranged from .25 to .29). Children's performance was also related to the number of excursions with mother outside the home (correlation of .19 for Reading and .17 for Math) and mother's involvement in community and educational activities (correlations ranged from .19 to .31). Mother's unawareness of community resources was negatively related to children's performance (correlations ranged from -.20 to -.25).

Positive maternal attitudes toward local schools and satisfaction with her neighborhood were associated with children's scores (correlations ranged from .16 to .20). However, mothers' perception of the local classrooms as overcrowded was negatively related to performance (correlations of -.20).

Mother's reported use of physical punishment in response to her child's misbehavior was negatively related to her child's academic achievement (correlations of -.17 for Reading and -.20 for Math). Maternal perception of children's attributes showed some relationship to their performance. The number of activities and responsibilities the child could perform at the time of the interview was positively associated with the child's cognitive-perceptual scores (correlations ranged from .23 to .31), suggesting moderate generality in children's social competency. Also, the mother's ability to generate a number of different child strengths and characteristics of good teachers was positively related to her child's performance (correlations ranged from .18 to .25). These findings may reflect a generally positive maternal attitude toward the child and the school or perhaps the facilitating effect of the mother's own cognitive abilities (Shipman et al., 1976).

The researchers also examined the family status, situational, and process variables measured when the study children were 4 years of age in relation to their test performance at 9 years of age. Early status/situational variables generally showed moderately high correlations with the child's cognitive-perceptual functioning, with the highest relationships between father's education and the child's math achievement (correlation of .56), and between the number of household conveniences and reading achievement (correlation of .41). Families' economic eligibility for Head Start and adult availability (adult/child ratio) in Year 1 were negatively associated with children's performance in Year 6 (correlations ranged from -.28 to -.41). Family process variables that reflected the mother's early involvement in school-related activities were positively related to her child's third grade achievement. Activities of particular importance included frequency of reading to child, knowledge of child's favorite stories, and use of interactive-information responses. However, the reading/telling stories variable tapped in Year 1 was not significant in the Year 6 analysis, suggesting that these interactions are important during the preschool years by perhaps providing a readiness for school, but their effectiveness decreases as children progress in school. Similarly, reported frequency of the mother's newspaper and magazine reading in Year 1 was only marginally related to her child's later achievement.

Measures of the mother's social involvement during the child's preschool years, parent's participation in additional schooling, and mother's aspired and expected educational attainments for her child measured in Year 1 were all positively related to later child performance. Negative relationships were observed between children's cognitive-perceptual scores and the number of negative characteristics the mother reported for her child, and between children's scores and mother's early statements that children must be made to learn and that schools would be better if parents had more control of them.

Examination of the stability of family characteristics revealed moderate to high stability over the six year period for status characteristics, but process characteristics showed considerable individual change. Thus, findings from analysis of the sample across time indicated an interrelatedness of family status, situational, and process characteristics and suggested that these variables may have different meaning depending on the child's developmental level and larger social context. Also, changes in process variables over time suggested that the way in which a family operates within the environment may change considerably although status indicators may remain unchanged.

In summary, a number of major findings from the ETS-Head Start Longitudinal Study are of particular relevance to the present study. Within a relatively narrow socioeconomic range, considerable variation in family processes was observed, particularly interactive patterns with children, attitudes toward local schools and education, use and knowledge of community resources, participation in extrafamilial activities, feelings of efficacy and optimism, support of school-related activities, and perceptions of the target child. Less than 13% of the variance in any one of these behaviors could be explained by any one of the status or situational variables. Status and situational variables yielded generally high correlations with child performance, with the parents' educational attainment having the strongest relationship. Family process variables positively associated with the child's performance on academic and problem-solving tests included extent of maternal encouragement and involvement with the child in school-related tasks, achievement expectations for the child, use of alternatives to physical punishment, and knowledge and use of community resources. Positive changes in certain family process variables over time (e.g., mother's community involvement, frequency of reading) contributed significantly to accounting for the child's achievement, an important finding that suggests the possibilities for effecting change within the family environment that may influence children's academic performance.

The ETS-Head Start study also found that although status, situational, and process variables shared considerable commonality in their prediction of children's performance, process variables provided important explanatory information and programmatic clues that were not obvious from status/situational characteristics alone. The researchers suggested the following:

> The association between status/situational and process variables might be best understood as reflecting differences in opportunities for particular processes to emerge. Family process variables are thus considered as the underlying mechanisms by which child outcome differences associated with family status characteristics are created and maintained (Shipman et al., 1976, pp. 167-168).

In an effort to better understand the relationship between ETS-Head Start study children and their family environments, Shipman (1976) conducted intensive case studies of children who, on the third-grade achievement test were (a)) significantly above or below the average performance for children of similar ethnic and income status in basic reading and math skills, or (b) significantly deviant from the level predicted by their performance on a test of preacademic skills at age 4. Based on a massive array of child, family, and school information gathered on those children who had deviated most, a number of interesting observations were reported. Most clearly, there were multiple determinants of academic success or failure, with no score or composite of scores consistently associated with level of academic achievement. Among children who had been retained in first or second grade, a higher percentage had not attended preschool as compared to those children who had had preschool experience. Moreover, for those children who continued to receive support services through Project Follow Through, the data suggested the positive influence of broad-based, comprehensive services to children and families.

The authors presented a number of generalizations from the longitudinal examination of the exceptional needs study children of particular relevance to the present study. First, "any particular aspect of individual functioning must be evaluated in the context of other aspects of the developing organism and the environmental conditions in which the organism is behaving" (Shipman, 1976, p. 47). Children's behaviors were found to be closely intertwined and knowledge of one developmental domain added to the understanding of another. Second, the meaning of many variables became understandable only in relation to their developmental interactions, suggesting a developmental research approach that considers the dynamics of child-environment interactions. Third, even within this restricted sample, family status, situational, and process variables were associated with children's academic progress. It was found, however, that family process variables as compared to status/situational variables were more predictive of children's reading and math achievement. Shipman (1976) cautions that "these predictors are not determinants of achievement, and that families can and do change, with corresponding changes in their interactions, and such change can be facilitative or harmful" (p. 49). Fourth, the effectiveness of early measures of child functioning in identifying children likely to later perform at higher or lower skill levels suggests that preschool assessment can be used to guide the development of programs individually tailored to meet children's needs rather than relying on programs based on the ascribed needs of children according to global indicators of social status. Fifth, the researchers noted that facilitating influences usually required continued reinforcement. For those children who showed the greatest gain in academic skills between the ages of 4 and 9 years, there was continuity in facilitating school experiences and a home environment that was emotionally and educationally supportive. Finally, the researchers emphasized the cumulative and interactive effect of the many child, parent, teacher, and setting variables assessed in the study. They particularly noted that for different clusters of children, different clusters of variables appeared to be influential, suggesting the need for multidimensional assessment of individuals and their environments.

The literature concerning children reared in disadvantaged family environments also provides important evidence for two related developmental phenomena: (a) children reared in certain disadvantaged family environments show a decline in measured intellectual functioning, and (b) there is a "cycling of disadvantagement" that is reflected in intergenerational continuities for various types of disadvantagement. Evidence for the first observation is provided by early studies of gypsy and English canal boat children (Gaw, 1925; Gordon, 1923). Both groups of children showed marked decrements in Stanford-Binet IQs that increased with age. The mean IQ in the 4- to 6-year-old canal boat children was 87, but the adolescents within the same family had mean IQs of only 60. This might be attributed to the cumulative effects of an unstimulating environment, since the children only went to school when the boats were docked, most of their parents were illiterate, and they had little social interaction beyond the family (Hetherington & Parke, 1975). An increasing intellectual deficit has been found among rural children living in isolated regions of the U.S. (Asher, 1935; Wheeler, 1942). The IQs of children living in the isolated mountain region of Virginia were significantly lower than those of children in nearby villages, and the IQ scores of the children decreased with age (Sherman & Key, 1932).

In a study of 1,800 black children in five southeastern states (Kennedy, VanDeRiet, & White, 1963; Kennedy, 1969), researchers tested and followed-up children over a five year period. Results of retesting indicated that the older the child, the lower the IQ, and the lower the socioeconomic status level of the family, the lower the child's IQ. Family residence was also correlated with IQ; the mean IQ for children in metropolitan areas was 84, in urban areas 79, and in rural areas 79. Declines in measured IQ have been reported for children of mothers with low IQ living in very low socioeconomic and inner-city circumstances (Heber et al., 1968). A similar effect was noted by Douglas (1964), who reported that between 8 and 11 years of age, the intellectual performance of children from poor home conditions deteriorated so that the gap between the social classes widened during the middle years of childhood. Between 11 and 15 years, the social classes continued to diverge in scholastic attainment. Other researchers have reported declines in academic achievement for black children (Kennedy, 1969; Osborne, 1960), although the effects of race and social class have not been clearly separated, ie., a disproportionate number of blacks are found in the lower social classes (Hetherington & Parke, 1975).

The observation that siblings from some families exhibit progressive decrements in intellectual skills over time suggests that families seriously differ in their ability to positively contribute to the growth and development of their children. Furthermore, Rutter and Madge (1976) provided convincing evidence for the transmission of family disadvantagement into the next generation, ie., disadvantaged children become disadvantaged parents. They reported intergenerational continuities for intellectual level, reading difficulties, crime and delinquency, psychiatric disorders, and parenting behaviors. Although the mechanisms of effect are not well understood, there is a considerable amount of evidence supporting the continuous adverse influence of disadvantaged family environments on children's development and later adult status.

"Exceptional" Child Studies

The role of family environmental processes in children's development has particular relevance to educators concerned with remediating, and more importantly, preventing mental retardation, learning disabilities and related difficulties, and emotional and behavioral disturbances of children. The influence of family variables in the onset and persistence of children's learning and behavior problems is suggested by the consistent observation that children from minority and low-income families are overrepresented in programs for the educable mentally retarded (MacMillan, 1977; Mercer, 1973). This association has been an impetus for the epidemiological studies previously discussed. However, relatively few studies have comprehensively assessed the family environments of exceptional children. The following discussion will review major efforts aimed at advancing this area of inquiry.

Mental retardation. For the most part, studies concerning children with exceptional needs have focused on the adverse effects severely mentally retarded children have on their families, including tragic crisis and role reorganization crisis (Farber, 1960), marital disintegration and role tension of siblings (Fowler, 1968), changes in community relationships, and psychological stress in fathers (Cummings, 1976). Laten and Wikler (1978) reported that families with a child who is mentally retarded have a greater potential for experiencing stress, which may lead to family dysfunction requiring societal intervention. Indicators of stress that differentiate families of retarded children from families of normal children matched for social class include increased social isolation and lack of social support, behavior and/or medical problems involving increased burden of care for the severely retarded child, and increased personal stress for parents (Wikler, 1980).

An early study by Meyerowitz and Farber (1966) investigated family variables derived from parent interview information that differentiated normal and educable mentally retarded children. When compared to the family environments of normal children, mentally retarded children's family environments were characterized by overcrowding, instability in family relationships, inattentiveness, less involvement in the community, less adequate home resources, and were less capable of motivating children intellectually and academically. These results suggested that certain social and psychological family process variables were perhaps negatively influencing children's cognitive development or exacerbating the effects of an already manifest mental handicap. The sample studied by Meyerowitz and Farber (1966) also exhibited considerable variation on all family characteristics described, thus reflecting considerable heterogeneity among family environments within a relatively narrow subpopulation.

Wilton and Barbour (1978) examined young high-risk children's activities with their mothers and the techniques used by these mothers while interacting with their children. The design of this study is of particular interest. Sample children considered at high risk for cultural-familial mental retardation (N=10) were selected on the basis of the following criteria: (a) preschool age, (b) no evidence of biological or organic factors which could account for any observed retardation, and (c) a sibling in special class who showed no evidence of organic impairment and was mildly mentally retarded (IQs within the 50-70 range on the Stanford-Binet or WISC and concomitant adaptive behavior difficulties). Support for this selection procedure was drawn from studies by White and Watts (1973). These researchers selected a group of young children for intensive study based on their older sibling's development (high competency vs. low competency), a procedure which suggests the child-rearing competencies of the mother are reflected in the level of development achieved by her children. Wilton and Barbour (1978) hypothesized that in the absence of intervention, high-risk preschoolers in their sample would similarly show the retardation exhibited by their siblings.

The contrast group (N=10) was chosen from a pool of preschool siblings of children in the same schools as the special class children, and matched to high-risk preschoolers on the basis of sex, age, low socioeconomic status, and number of siblings. All preschoolers in the contrast group were considered by teachers to be of average intelligence. The total sample was further subdivided into younger (12 to 27 months) and older (30 to 46 months) groups of high-risk and contrast children. A number of scales and indices developed by White and Watts (1973) for the Harvard Preschool Project were used to classify children's behavior and mothers' interaction techniques, such as the Children's Activities Scale -- activities undertaken by the child with the mother were classified as highly intellectual, moderately intellectual, nonintellectual, or social emotional; the Interaction Techniques Scale -- used to classify mother's behavior as teaching, facilitation, routine talk, observation, restriction; and indices entitled Imitation, Encouragement, and Compliance, used to classify these types of mother-child interactions. Mothers were observed at home during a single visit for approximately one hour. Descriptions of children's activities and interactions with the child were taped, following a 20-minute "dry run" to acquaint the family with the procedure prior to actual data collection. Narratives were subsequently transcribed and coded.

Data analysis revealed that several aspects of mother-child interaction differentiated older, but not younger, high-risk and contrast groups. Older contrast children interacted more often with their mothers and engaged in more highly intellectual activities than did high-risk children. Mothers of older contrast children more often engaged in didactic teaching with their children, more often encouraged their children's activities, and were more successful in controlling children's activities than mothers of high-risk children. Thus, older contrast children spent more time in learning situations with mothers who used interaction techniques that appear more conducive to the development of children's intellectual competencies when compared to the interactions of high-risk children and their mothers. Conversely, mothers of older, high-risk children, when compared to contrast group mothers, engaged in less didactic teaching while interacting with their child, showed less encouragement and more discouragement of child's activities, and more frequently failed in their attempts to control their children's activities. In effect, mothers of older, high-risk children manifested a number of "high-risk" behaviors that may increase the likelihood that their preschool child will suffer the plight of their older sibling, namely, a mild mental retardation diagnosis and special class placement.

Nihira and his associates are currently conducting a five-year longitudinal investigation of the effects of educational and residential environments on the cognitive and social development of children in three special education programs: educable mental retardation (EMR), trainable mental retardation (TMR) and learning disabilities (Nihira, Meyers, & Mink, 1980; Nihira, Mink, & Meyers, 1981). Preliminary review of their data revealed considerable variation in the quality of home environments of EMR students (Meyers, Nihira, & Mink, 1979). Subsequently, two studies have been reported, both examining the relationship between home environments and the personal and social adjustment of mentally retarded children.

Nihira et al. (1980) investigated the relationship between home environmental variables, family adjustment, and the social competency of TMR (N=114, $\bar{X}$ IQ = 42.4, SD = 9.9) and EMR (N=152, $\bar{X}$ IQ = 66.4, SD = 10.0) children. All children were living in their natural homes with married parents. In each group, approximately half the children were female, approximately 75% were white, and the remaining 25% were black, hispanic, and other minority group children. Construction of a parent interview schedule was based on previous research suggesting the relevance of certain family environmental variables to nonhandicapped children's development. A combination of structured questionnaires and observational inventories was used to measure: (a) parental behavior and attitude toward the target child, (b) psychological climate of the home, and (c) demographic and social characteristics of the home. Three standardized instruments were included in the interview/observation schedule and appear particularly useful for child-environment studies, namely the Home Observation for Measurement of the Environment-HOME (Caldwell & Bradley, 1978), the Henderson Environmental Learning Process Scale-HELPS (Henderson, Bergen, & Hunt, 1972), and the Family Environment Scale-FES (Moos & Moos, 1981). The Home Quality Rating Scale-HQRS, was developed for this study and consisted of 28 rating scales designed to assess various aspects of the home environment on the basis of the interviewer's impression (Meyers, Mink, & Nihira, 1977).

Two additional variable categories were included in the study design. Family adjustment, or the handicapped child's impact on the family, was measured by a combination of parent and interviewer ratings of the impact on family life, marriage, and siblings, and family members' level of coping with the target child. Characteristics of the child was the final category and included measures of adaptive behavior, self-concept, social interaction and adjustment (parent ratings), and child's age and sex.

Comparison of EMR and TMR groups indicated differences in socioeconomic status, with TMR families higher in status than EMR families. In the study sample, EMR children had more siblings that TMR children. The degree of impact of the target child's handicap appeared greater for TMR than for EMR families, although there was a more positive attitude toward the child's handicap in TMR families. Subscales of the FES indicated EMR families reported more conflict and less cohesiveness than TMR families.

Using a series of canonical correlation analyses, researchers examined the relationship between (a) home environmental variables and characteristics of the child, (b) home environmental variables and family adjustment variables, and (c) family adjustment variables and characteristics of the child. Separate canonical correlation analyses for TMR and EMR samples were conducted in examining each of these sets of variables. Analysis of the first set of variables indicated two dimensions of home environments significantly related to the behavioral characteristics of TMR and EMR children. The first dimension, labeled "harmony and quality of parenting," for TMR children and "family harmony" for EMR children, was associated with children's social and psychological adjustment, and inversely related to maladaptive behavior. These dimensions of the home environment were defined primarily by general measures of the social climate of the home rather than observations of specific parental behaviors. The second dimension, labeled "growth-promotion in child-rearing," for TMR children and "harmony and educational guidance" for EMR children, was associated with children's social competency. For the EMR group, this dimension also included measures of the social climate of the home (e.g., family organization, cohesion) and measures of parents' intellectual and educational stimulation. For the TMR group, the second dimension was defined only by parent-child interaction and parental attitude toward the TMR child's development. These differences between groups suggested the adaptive competence of EMR children was more related to the social and psychological milieu created by the family (Nihira et al., 1980).

The second canonical analysis examined the relation between home environmental variables and family adjustment variables. For both TMR and EMR samples, the first dimension was labeled "harmony and quality of parenting," and was defined by a complex of environmental variables including: (a) sociodemographic characteristics, e.g., mother's education, socioeconomic status, etc., (b) social climate variables, e.g., family cohesion, expressiveness, etc., and (c) specific parental behaviors toward the target child. This dimension was significantly related to a set of family adjustment variables labeled "observed coping level." The second dimension obtained for both TMR and EMR groups was labeled "organization and marital harmony." The variables defining this dimension were associated with parents' subjective feeling of the negative impact of mental retardation, and results indicated that the impact was likely to be greater when there was marital or family disharmony.

The third canonical analysis examined the relationship between child characteristics and family adjustment variables. For both TMR and EMR groups, the first dimension revealed a strong reciprocal relationship between the target child's social adjustment with siblings and the adjustment of the siblings with the child. The second dimension indicated that the retarded child's level of social competency was associated with the parent's observed level of coping with the child. Personal and social maladaptive behaviors of the child were associated with parents' feelings of the negative impact of mental retardation on the family.

In summary, results of the Nihira et al. (1980) study indicated that a combination of interviewing and observational techniques described salient dimensions of the home environment that were associated with the behavioral characteristics of TMR and EMR children. The intellectually stimulating home environment was associated with adaptive competence in both groups. Social adjustment of children was associated with home social climate variables, particularly cohesiveness and harmony, in contrast to disorganization and conflict, which were associated with children's maladaptive behavior. Family harmony was associated with parents' ability to cope with the problem of mental retardation. Results also indicated differences between EMR and TMR samples that suggest perhaps the greater influence of home environmental variables in the EMR child's development. The EMR sample contained larger families of lower socioeconomic status when compared to the TMR sample. Moreover, data analyses revealed the behavioral competencies of EMR children were more closely associated with the social climate of the home, a culturally stimulating atmosphere, and higher educational expectations and aspirations for the child by parents. Although causative links are not indicated by these data, home environment differences between groups of children functioning at different intellectual levels warrants further investigation.

The second study reported by the Nihira research group examined the relationship between the home environment and school adjustment of a sample of TMR children (Nihira et al., 1981). Details of the sampling procedure were provided in this report. Students were drawn from the TMR enrollments of 15 school districts as they existed in 1976 (prior to implementation of P.L. 94-142), resulting in an absence of profoundly retarded children in the TMR classes at the time of the study. An arbitrary quota of five to seven students per class was established and parents were sent letters requesting their participation. Those who did not respond or refused to participate were replaced by families in the same class until the quota was reached. Approximately 60% to 65% of the contacted families agreed to participate. The resulting sample consisted of 104 TMR children, ranging from 9 to 16 years of age, with a mean age of 12.5 years. The children, about half male and half female, included 11% classified as mildly retarded, .59% moderately retarded, and 30% severely retarded ($\overline{X}$ IQ = 42.4, SD = 9.9). Eighty percent of the parents were married and the average educational level of both mother and father was high school education. The average occupational level of the head-of-household was 46 (Duncan Socioeconomic Index), indicating a middle-class level of occupational status.

The parent interview/observation schedule described above (Nihira et al., 1980) was used to assess TMR children's home environments. The schedule was administered by trained interviewers during a home visit that lasted approximately two hours. The interview was conducted with the primary caregiver, usually mothers in this sample. Home visits were scheduled when the target child would be present to observe parent-child interactions. Assessment of children's school adjustment included measures of social status, self-concept, and observed behavior. Children's social status was defined by teacher ratings of acceptance, tolerance, or rejection by classmates. The Coopersmith Self-Esteem Behavior (teacher rating scale) and the Primary Self-Concept Inventory (child's self-report) were used to tap children's self-concept. The AAMD Adaptive Behavior Scale and the Project PRIME Teacher Rating Scale were used to describe children's classroom behavior.

Data obtained from home visits and child assessments was subject to a series of correlational procedures. Univariate analysis indicated five of the seven subscales of the HOME inventory were related to at least one of the school adjustment variables. In particular, subscales measuring provision of stimulation through equipment, toys, and experiences, and stimulation of mature behavior were significantly related to TMR children's social status, self-concept, and adaptive behavior in school, and inversely related to maladaptive behavior. Four subscales of the FES, control, cohesion, expressiveness, and moral-religious, were also associated with some aspects of school adjustment. Children's adaptive behavior, self-concept, and social status were significantly related to the factor labeled harmony and quality of parenting, defined by the interviewer's rating of parents' child-rearing practices, coping with the target child, family adjustment, and general harmony of the home. This factor was inversely related to children's maladaptive behavior.

A canonical analysis was conducted to examine the relationship between home environmental variables and children's school adjustment variables. The first pair of canonical variates was statistically significant. Home environmental variables with the highest canonical loadings were harmony and quality of parenting (HQRS); stimulation through equipment, toys, etc. (HOME); stimulation of mature behavior (HOME); pride, affection, and thoughtfulness (HOME), and cohesion versus conflict (FES). The researchers noted that the pride, affection, and thoughtfulness (HOME) variable had a significant impact on children's school adjustment only in combination with other relevant family variables.

In summary, results of this study of TMR children and their home environments corroborated earlier findings (Nihira et al., 1980), and indicated specific family variables were significantly related to mentally retarded children's personal and social adjustment. Harmony and quality of parenting, the level of intellectual stimulation, and emotional support and approval for learning were found to be more important in relation to mentally retarded children's adjustment than general sociodemographic indices, such as mother's education or family size.

Emotional and behavioral disturbances. Most studies of family environmental processes as they relate to children's emotional and behavioral difficulties have involved the analysis of a limited number of variable relationships, with a few notable exceptions (Baumrind, 1967, 1971; Martin & Hetherington, 1971). A limited review of these studies will focus on two problem areas that are of particular relevance to educators, namely, conduct disorders and anxiety-withdrawn disorders.

There is considerable evidence supporting the hypothesis that deviant parents have deviant children. Becker, Peterson, Hellmer, Shoemaker, and Quay (1959) reported that parents of children who have conduct disorders were maladjusted, inconsistent, arbitrary, and often expressed anger. Johnson and Lobitz (1974) reported that fathers of children who have conduct disorders were emotionally distant and mothers were often tense and frustrating. Sherman and Farina (1974) found that children with poor social skills and behavior problems were reared by mothers who had low interpersonal competence. Weissman, Paykel, and Klerman (1972) investigated the maternal role performance of a group of acutely depressed women as compared with a group of matched normal controls. The depressed women were significantly more impaired mothers, indicated by emotional uninvolvement, impaired communication, hostility, and resentment. Depressed maternal behaviors appeared to have the greatest effect on adolescents who reacted to their mother's hostility with withdrawal and serious deviant behaviors (Weissman et al., 1972). Hetherington and Martin (1979) have suggested that "these behaviors may just be part of a larger pattern of parental, social, and cognitive incompetence that are associated with inadequate coping skills" (p. 257).

Studies of families of delinquent as compared to nondelinquent children have revealed the following findings: (a) a higher incidence of criminal behavior among parents (particularly fathers) and siblings (Glueck & Glueck, 1950; McCord & McCord, 1958; Shaw & McKay, 1942); (b) a higher level of marital discord and interpersonal conflict (Bennett, 1960; Johnson & Lobitz, 1974; Rutter, 1971); and (c) difficulty in decision-making situations and in general relations and patterns of communication among family members (Alexander, 1973; Ferraira & Winter, 1968; Hetherington, Stouwie, & Ridberg, 1971). Rutter (1980) reported parental discord and disharmony, rather than separation or divorce, appeared to be the critical family influences on children's behavior problems. Conduct disorders have been associated with disturbed relationships even when the marriage is intact (Lambert, Essen, & Head, 1977; Power, Ash, Schoenberg, & Sorey, 1974).

Divorce, however, has been associated with adverse outcomes for some children. Wallerstein and Kelly (1979) reported that pervasive sadness, loneliness and grieving for the lost parent, anger, anxiety, and feelings of rejection were common emotions experienced by children of all ages at the time of separation. The developmental course the child will take following divorce seems to depend on a number of factors. Based on his studies, Rutter (1981) reported that when children experienced only a single stress, it carried no significant psychiatric risk. However, it seemed that when children who have been exposed to several concurrent stresses or chronic stress must also deal with family disruptions, the adverse effects have increased as a multiplicative, not an additive function of the number of stresses. Additionally, family stresses also appear to interact with and are compounded by influences in the family's larger social context. Evidence from other studies suggests that the quality of housing, the need for the mother to work, economic status, geographic mobility, and stresses and supports in other social networks moderated or exacerbated stresses associated with divorce (Colletta, 1978; Hodges, Wechsler, & Ballantine, 1978). Rutter (1981) reported that a good relationship with one parent served to protect children brought up in an otherwise disrupted, unhappy home. These children were less likely to develop conduct disorders than other children in similar homes whose relationship with both parents was poor. However, Hetherington, Cox, and Cox (1979) emphasized that the parent relationship must be both a particularly good one and with a parent currently living with the child in order for the relationship to have a significant "buffering effect."

Robins, West, and Herjanic (1975) found that black children living in single parent homes of low social status were less likely to drop out of school if brought up by grandparents, and suggested that under adverse circumstances, the extended family provided continuity and support. Wilson (1974) investigated multiple problem families and found strict and careful supervision of children was associated with a reduced risk of delinquency. Rutter (1981) concluded:

> It is not only good relationships and readily available sources of emotional support which are likely to be protective at times of stress, but also that the

> translation of a caring attitude into a well-structured family environment with well-understood rules and effective supervision may be equally important. (p. 214)

Other researchers have tried to illuminate critical factors in parents' interactions with their children that are associated with children's deviant behavior. Dimensions of parental behavior have been frequently emphasized, particularly restrictiveness, permissiveness, hostility-warmth, acceptance-rejection and consistency-inconsistency. Extremes of many of these parent behaviors have been associated with high levels of antisocial behavior in children (Martin, 1975; Staub, 1976). A study by Baumrind (1967) exemplifies research efforts in this area. On the basis of 14 weeks of behavioral observation of nursery school children, three groups of children exhibiting markedly different groups of behavior were identified. Group I (energetic-friendly) children were rated higher than the other two groups on interest and curiosity in approaching novel or stressful situations, self-reliance, self-control, energy level, cheerfulness, and friendly relations with peers. Group II (conflict-irritable) children were less cheerful and more moody, apprehensive, unhappy, easily annoyed, passively hostile, and more vulnerable to stress that Group I children. Group III (impulsive-aggressive) children were even less self-reliant and controlled than Group II and seemed to be almost entirely impulsive and lacking in self-control. However, they were more cheerful and recovered more easily from irritations than did Group II children. A structured observation procedure was used to code the behavior of the mother while teaching the child some simple mathematical concepts.

Results indicated parental behavior was similar in both the teaching and free play situations. Parent scores on control, maturity demands, communication, and nurturance during observations were compared for each of the groups. Parents of Group I (energetic-friendly) were more nurturant than parents in other groups, measured by high use of positive reinforcement, low use of punishment, and responsiveness to the child's requests. These same mothers were not perceived as indulgent but rather directed and controlled the child when necessary, and were described by Baumrind as "authoritative" rather than "authoritarian." Group II (conflict-irritable) mothers, in contrast to Group II (impulsive-aggressive) mothers, were more persistent in enforcing their demands on the child and in using coercive techniques. Group III mothers were least effective in directing their children's behavior, put forth fewer maturity demands, and tended to be less nurturant. Baumrind (1967) concluded that friendly, energetic, better adjusted children had parents who exhibited a high level of nurturance, and had high expectations and maturity demands for their children. These parents clearly communicated their feelings and expectations, and consistently enforced their demands. Parents of conflict-irritable preschoolers exhibited a combination of inflexible, frustrating, and nonsupportive responses, along with punitive responses. Parents of impulsive-aggressive children were lax, inconsistent in discipline, and unable to define and maintain restrictions for their children (Baumrind, 1967).

In a subsequent study, Baumrind (1971) used a reverse research strategy, first identifying parents with cluster of different attributes and then relating these parent attributes to the behavior of their children. Results were similar to her earlier findings. Sons of "authoritative" parents were more friendly, cooperative, and achievement-oriented that those of other parent groups, and daughters of "authoritative" parents were more dominant, achievement-oriented, and independent.

Additional aspects of parental child-rearing practices have been associated with children's conduct disorders. Parents of deviant children in contrast to nondeviant children have been shown to issue more commands (Terdal, Jackson, & Garner, 1975); to punish deviant behavior more frequently (Sallows, 1973, as cited in Hetherington & Martin, 1979); and to respond positively to deviant child behaviors (Wahler, 1968) and adversely to nondeviant behaviors (Lobitz & Johnson, 1975). Patterson (1977) has proposed that due to poor parenting skills, mothers of aggressive children create a situation where family members accelerate their coercive behaviors. A cycle of coercive behaviors ensues and ineptness in stopping this cycle may lead to feelings of helplessness in the mother that in turn intensifies her ineptness as a parent.

Markedly inconsistent or haphazard discipline has been associated with an increased likelihood of conduct disorders and delinquency in children (McCord, McCord, & Zola, 1959; Patterson, 1977; Rutter, 1980). Family disorganization also appears to play a role in the development of antisocial behavior. Garmezy (1974) and Hetherington, Cox, and Cox (1977) reported children were more likely to exhibit aggressive behaviors when their home environment was characterized by a lack of communicated standards, lack of established routines for family responsibilities, and general chaos.

The emotional and behavioral difficulties exhibited by children diagnosed as anxious-withdrawn (referred to as neurotic in some studies) have also been associated with factors in the family environment. Marital conflicts have been shown to be more common between parents of anxious-withdrawn children than between parents of normal children (Cummings, Bayley, & Rie, 1966; Gassner & Murray, 1969). Researchers have also examined aspects of parent-child interactions and child-rearing practices that are associated with these disturbances. Based on indirect measures, such as interviews and case studies, there is some evidence to support the relationship between parent restrictiveness and anxiety-withdrawal symptoms in children (Kagan & Moss, 1962; Rosenthal, Finkelstein, & Robertson, 1959; Sears, 1961).

Baumrind's (1967) observational study described above is relevant to the present discussion. Group II children (conflict-irritable) manifested early behaviors that may later result in anxiety-withdrawal disturbances (Hetherington & Martin, 1979). Parents of these children exerted less control and made fewer maturity demands than parents of less maladjusted children. However, Group II parents exercised more control and made more maturity demands than Group III parents (impulsive-aggressive). Based on limited findings, Hetherington and Martin (1979) concluded that at least part of some patterns of anxious-withdrawal symptoms in children were associated with an intermediate degree of parental control administered by parents who were relatively critical and non-nurturing. They further concluded that the clinical and research literature consistently pointed to some kind of unusual intensity of emotional involvement in the parent-child relationship of anxious-withdrawn children.

In summary, investigations of the family environments of children with emotional and behavioral problems have revealed a number of associated family variables. Deviant parent models, marital discord, disturbed parent-child relationships, and ineffective disciplinary practices are more often found in families with deviant children than in families without deviant children. These findings lend support to the notion that children with behavior problems are part of a larger dysfunctional family system. There is also evidence suggesting multiple and interacting influences in the development of child problems. A positive relationship with one parent or a supportive extended family network may serve as a buffer to the effects of heightened levels of stress associated with persistent family difficulties. Future studies examining the interrelationships among child, family, and extrafamilial variables may illuminate the key processes influencing the presence or absence of children's emotional and behavioral disturbances.

Learning disabilities and related difficulties. The National Joint Committee for Learning Disabilities (NJCLD) recently published their new definition of learning disabilities (Hammill, Leigh, McNutt, & Larsen, 1981). The current definition states,

> Even though a learning disability may occur concomitantly with other handicapping conditions (e.g., sensory impairment, mental retardation, social and emotional disturbances) or environmental influences (e.g., cultural differences, insufficient/inappropriate instruction, psychogenic factors), it is not the direct result of those conditions or influences (Hammill et al., 1981, p. 340).

This clause restates the Committee's belief that learning disabilities are not the effect of environmental influences. However, other investigators have given considerable attention to the role of environmental influences in the onset and/or exacerbation of children's learning disabilities (Doleys, Cartelli, & Doster, 1976; Freund & Elardo, 1978; Freund, Bradley, & Caldwell, 1979; Kronick, 1976; Norman-Jackson, 1982; Peck & Stackhouse, 1973). Freund et al. (1979) have emphasized that child-focused assessment "overlooks the assessment of home and family variables which also make an important contribution to the manifestation of a child's learning disabilities" (p. 39). These researchers have advanced the position that the traditional LD exclusion category of low socioeconomic status masks potential subgroups of inefficient learners who may later be misdiagnosed as cultural-familial retardates in the absence of early and appropriate intervention. Support for their position has been drawn from the observation that classes for the educable mentally retarded have been found to contain a disproportionate percentage of lower-class black and other minority children (Mercer, 1975; Franks, 1971), while LD program children were predominantly white from middle- and upper-class families (Franks, 1971). Freund et al. (1979) also postulated that some children from middle- and upper-class families may be "environmentally disadvantaged" with regard to parent-child interactions.

Gruenbaum (1961) first coined the term "learning problem family," based on her experience with families of boys with normal intelligence who exhibited learning difficulties. Families included in her clinical analysis showed no signs of economic or cultural disadvantagement or history of prolonged mother-child separation. Children from these families showed no signs of neurological or physical impairments that could account for their learning problems. Gruenbaum's case study review indicated that learning problem families engaged in restricted communicative interactions (e.g., omission of facts and feelings) and often utilized defense mechanisms of renunciation, denial avoidance, and reaction formation. She described the home environment of these families as "frought with a sense of precariousness" (Gruenbaum, 1961, p. 464).

Kronick (1976) examined the in-home behavior of three families in which an LD child exhibited problems in peer interaction. Results of her naturalistic observations, although conducted on a small sample, suggested that dysfunction and disorganization characterized the behavior of these families. Kronick's experiences with learning problem families has lead her to advocate a "sociological perspective" in understanding children's learning disabilities (Kronick, 1976).

Doley et al. (1976) conducted a comparative study of mother-child interactions exhibited by learning disabled, behavior problem, and normal children and their mothers. Nine mother-child pairs were selected on the basis of one or more specific learning disabilities exhibited by the child (N=6 boys, 3 girls; $\bar{X}$ CA=6 years, 8 months). Nine mother-child pairs were selected from a pool of clinic children who showed high levels of noncompliant behavior (N=6 boys, 3 girls; $\bar{X}$ CA=6 years, 1 month). A third group of mother-child pairs were selected from a pool of mothers responding to announcements for voluntary research participants (N=7 boys, 2 girls; $\bar{X}$ CA=5 years, 10 months). Measures of children's abilities include the Stanford-Binet scale, WISC, and Meeting Street School Screening Test. Each child classified as LD performed within the normal range of intellectual functioning (>80 IQ) and demonstrated individual within-test discrepancies. LD children also exhibited delayed psychomotor functioning, particularly in the area of language function.

Mother-child interaction patterns were observed for 20 minutes through one-way glass in a laboratory playroom. Mothers were instructed to select a toy and play with their child as they would at home during the first 10-minute period observation period. During the second 10-minute period, mothers were told to determine and direct the child's activities. Maternal attitudes and perceptions of their child were assessed after the observation periods using the Parent's Attitude Test. Four categories of maternal behavior were tallied: rewards, commands, questions, and criticisms. Children's compliance to their mother's commands were also recorded.

Analysis of the data indicated that mothers of LD children dispensed significantly more rewards than normal control mothers and mothers of noncompliant children. Mothers of LD children also asked significantly more questions than mothers in either of the other two groups. Mothers of normal children elicited a significantly higher percentage of compliance behaviors than mothers in the other groups. With regard to these findings, the researchers noted that the high level of reward behavior exhibited by LD group mothers also included attending to their children's attempts to leave an uncompleted task and to complaints about the difficulty of a task. These inappropriately timed mother-child behavioral contingencies were interpreted as possible rewards for "giving up" behavior. The high level of questioning by the mothers of LD children was interpreted as possibly reflecting excessive "drilling" by LD mothers, since most of the questions related to the mother's teaching strategy.

Results also indicated LD group mothers exhibited a low level of criticism along with a high level of questions and commands, reflecting perhaps a maternal attitude of tolerance or acceptance of academic and nonacademic behaviors. Analysis of the parent attitude measure suggested that mothers of LD children judged their children to be better adjusted and have fewer problems than mothers of noncompliant children, but to have more problems of adjustment and behavior than the normal group mothers. The researchers noted the importance of parental attitudes concerning the causes of their children's behavior as possible determinants of parental responses (Doleys et al., 1976).

Freund and Elardo (1978) examined the relationship between various child-rearing and family structure variables and the social competence skills of learning disabled children. Their sample consisted of 17 children (N=16 boys, 1 girl; $\bar{X}$ CA=9.8), all having been diagnosed as learning disabled on the basis of clinic or school multidisciplinary team evaluations. All children had received or were receiving special educational services at the time of the study. A total of 15 mothers participated, with one mother volunteering three of her children for the study. An interview/observation measure was developed in order to assess the relationship between LD children's social skills and certain family process variables. The Home Environmental Process Interview-HEPI consisted of six subscales designed to tap important aspects of parental behavior conducive to the learning of social skills as indicated from previous research studies.

HEPI subscales were comprised of items specifically developed, selected, or adapted from other research measures. Subscale I, Parental Encouragement Techniques (PET), included interview questions concerning the target child's socially responsible conduct, and observational items regarding the mother's patience, tolerance, and appraisal of her child's helping behaviors. Subscale II, the Staub Subscale, was designed as a measure of the child's assumption of day-to-day home responsibilities. Subscale III, Other-Oriented Induction (OOI), included descriptions of hypothetical situations requiring disciplinary action by the parent. Mothers were asked to describe what they would do or say in each situation, and response scores reflected the extent to which the mother would point out to the child the consequences of behaviors for other family members. Subscale IV, Child-Oriented Sensitivity (COS), scored parent's awareness and communication of the child's feelings in the hypothetical situations used to measure disciplinary practices. Subscale V, Intellectual Stimulation, assessed educational encouragement, e.g., reading to and with the child, and parent's intellectual stimulation, e.g., discussions of newspapers. Subscale VI, Press for Other-Oriented Expectations for Child Behavior (POCE), tapped the parent's value orientation concerning prosocial and altruistic child behaviors. Except for the COS and POCE subscales, items were rated on a scale of 1 to 3 points. Interviews were conducted with mothers in their homes.

Children were assessed on two measures of social competence: role-taking and interpersonal problem-solving. In the role taking tasks, children listened to a two-character story describing a conflict situation. As part of the story, one character arrives later on the scene than the other, thus possessing less complete information about the conflict situation. The children were asked to "put themselves into the shoes" of the later-arriving character by identifying and explaining the feelings, emotions, and behaviors of that character. Their responses to each of two stories were rated on a scale from 1 to 3 points. Children were also assessed on a series of five interpersonal problem-solving tasks, each requiring the child to conceptualize alternate solutions to child-peer and child-adult conflicts. Each task yielded a score defined by the number of alternative solutions mentioned.

Data were analyzed by multiple regression, including the child's age and number of siblings along with the six HEPI subscale scores as predictor variables. The criterion variable, social competence, was the combined score on the role-taking and interpersonal problem-solving tasks. Results indicated the eight family environmental variables accounted for 83% of the variance in children's social competence. Two HEPI subscale scores, Parental Encouragement Techniques and Child-Oriented Sensitivity accounted for the greatest amount of variance in social competence (35.7% and 29.7%, respectively). The Intellectual Stimulation subscale score accounted for 7.5% of the variance in social competence. Fourteen percent of the variance in the criterion variable was accounted for by the family structure variables, with family size making the greatest contribution among the structure variables. In other words, in this small sample, LD children from larger families generally exhibited better social skills. The greater amount of sibling interaction that necessarily occurs in large families, in combination with effective parental techniques to encourage social responsibility, was suggested as a possible explanation of these findings (Freund & Elardo, 1978). The authors noted that the consistent negative association between large family size and children's developmental outcomes might be better understood if measures of family processes, e.g. parents' effectiveness in encouraging prosocial behavior, were included in the analysis of such relationships.

Other findings from this study are noteworthy. Two HEPI subscales, Child-Oriented Sensitivity and Intellectual Stimulation, were significantly associated with children's social competence only when considered in conjunction with other maternal behaviors, using multiple regression analysis. In an earlier investigation, no such relationship was found between these subscales and social competence when each subscale was examined separately using product-moment correlations (Elardo & Freund, 1978, as cited in Freund & Elardo, 1978). Also, there was a considerable number of intercorrelations between HEPI subscales.

The implications of these findings were summarized by the researchers:

> If the interrelationships of these processes are substantiated by subsequent LD research, it would be difficult to base specific intervention suggestions upon particular subscale scores. Refined differential diagnoses and associated prescriptive programming would require more factorially pure instrumentation than what the HEPI appears to be in this preliminary analysis. However, total scores of interview/observations, such as the HEPI, could nevertheless be used to detect home environments which pose a "high risk" to the LD child's social development, and to post-test for changes in those home environments which might occur after parent counseling and in-home intervention. (Freund & Elardo, 1978, p. 85)

Other studies have attempted to delineate family process variables that are associated with children's reading difficulties, often subsumed under the LD category. Peck and Stackhouse (1973) investigated the relationship between family dynamics and children's reading problems based on earlier evidence suggesting that a reading problem in one child is symptomatic of an upset family system (Miller & Westman, 1964, 1968; Peck, 1970, 1971). They hypothesized that an upset family system would be reflected in the family's communication patterns, specifically, disturbed communications exchanged among family members when they attempted to work together. The researchers adopted the techniques of conjoint family decision-making as a means of observing the family's communication patterns.

Thirty intact families participated in the study, each with a son of normal intelligence (ages 9 to 13 years). Fifteen of the families were classified as reading problem families (RP), based on their son's reading skills, and in 15 of the families, the son exhibited no reading difficulties (NRP). There were no significant differences between the families on sociodemographic variables, e.g., income, parents' educational level, family size. A child was designated as having a reading problem if (a) he was currently receiving special help for reading disabilities, (b) he had experienced the usual sequence of educational opportunities, and (c) his observed reading score (Gates Reading Survey Composite Score) was at least one grade below his expected reading grade as determined by the Bond and Tinker (1967) formula.

The conjoint decision-making task required each family triad member (father-mother-son) to individually complete a 38-item opinion questionnaire. Following completion, family members were brought together and instructed to arrive at a mutually satisfying decision for each of 20 items. These were items for which family members had indicated disagreement, although this fact was not revealed. The family triad discussion of items was tape recorded and subsequently coded for decision time, silent time, and four types of transactions: explicit information, agree-placate, attack-blame and irrelevant transactions.

Comparison of scores for reading problem families and non-reading problem families indicated that RP families took longer to complete the decision-making task and spent a greater percent of their time in silence. RP families evidenced fewer explicit information exchanges and more irrelevant exchanges than NRP families. No other group differences reached significance. The combination of low explicit information, high irrelevances, and extended decision-making time in RP families was interpreted as evidence for a "closed" family system. According to the researchers, in such families the learning potential of the child is invested in helping to maintain the family system. This translates into teaching the child "how not to learn," since "change and growth via learning are antithetical to the 'way it is' at home" (p. 510). Further support for the "closed" nature of RP families was suggested by the overwhelming number of RP families who refused to participate in the study. Out of an initial pool of 90 families, 58 families declined to participate; 46 of the families had a son with reading problems. Based on their findings, Peck and Stackhouse (1973) recommended the possible usefulness of a family-oriented approach to reading problems.

Children's ability to comprehend and use language is closely linked to other academic skill areas, such as reading and writing (McCarthy, 1954; Monroe, 1969). Differences in children's language skills have been associated with differences in social class (Hess & Shipman, 1965), and the most influential work in the field of language and social environment has been carried out by Bernstein (1960, 1967, 1971). Bernstein (1960) examined social class differences in the way parents talk to their children, and described the differences in terms of what he calls an "elaborated" and a "restricted" code or style of language usage. An elaborated code is one where the speaker selects from a relatively extensive range of syntactic alternatives to express ideas or concepts in such a manner that the message could be understood in its own right without knowledge of the speaker or the social context. In contrast, a restricted code is one where the range of syntactic alternatives is severely limited and where the understanding of the message is largely dependent on a knowledge of the speaker and the situational context of the conversation. A restricted language style involves the use of short, simple sentences, circularity ("you know?"), and limited use of unfamiliar pronouns. Each code is preferable to the other for some purposes, e.g., private jokes and shared references in a family or a group of friends may be best suited to a restricted style. On the other hand, an elaborated code is more effective for educational purposes, e.g., exploring logic, conveying fine discriminations in ideas, teaching new concepts (Rutter & Mittler, 1973).

Although the distinction between codes is not an absolute one, Berstein (1960) hypothesized that when there is a predominance of restricted code usage, language involving an elaborated code is limited in development. Restricted language codes have been frequently described as characteristic of lower-class families and elaborated codes associated with middle and upper-class families (Bullock, 1975; MacMillan, 1977). But as Bullock (1975) pointed out, "Berstein has emphasized that linguistic codes are not related to social class as such but to the family organization and the interaction between the individuals within it" (p. 52). Bullock further stated, "There are differences in language environment between socioeconomic groups, but there are also differences within groups" (p. 53).

More recently, variations in language environments have been examined within socioeconomic groups. Norman-Jackson (1982) conducted a longitudinal investigation of family interaction variables and language development measured at preschool and again during the primary grades. Two contrasting groups of black families were selected for study: families in which a second grader was a successful reader and families in which the second grader was an unsuccessful reader. Selection of families was also based on the presence of a younger sibling (24 to 42 months of age). This design was modeled after the research of White and Watts (1973) who successfully predicted (75% accuracy) 2-year-old children's social and intellectual competence at 3 years of age based on the competence level of their 6-year-old siblings. This finding has provided support for the hypothesis that family influences on children's development are reflected in commonalities across siblings. Thus, Norman-Jackson (1982) predicted that preschool siblings of successful readers would (a) participate in more verbal interactions with parents, (b) participate in more verbal interactions with school-age siblings, (c) receive more encouragement and less discouragement, and (d) develop more mature language. Preschoolers with mature language were predicted to be more successful readers than preschoolers with less successful language.

Families selected for study (N=15) were all American blacks; their housing was low-income; at least one parent was home three or more days per week (9:00 to 5:00 p.m.); and each had at least two children, one in first grade and one in the 24 to 42 month age range. There were no known cases of neurological impairments, emotional disturbance, or mental retardation among sample children. Forty-seven percent of the families were intact and none lived in an extended family situation.

A number of assessment instruments were used in conducting this study, including the Stanford-Binet, the Gray Oral Reading Test (Form A), measures of mean length of utterance (spontaneous language recorded during home visits), and a revised version of the Human Interaction Scale (White & Watts, 1973). Observational data also yielded indices of initiation, encouragement, and discouragement that occurred during parent-child interactions. Observations in the home were conducted on a first visit of 1-1/2 to 2 hours and a second visit of 1-1/2 hours. The Stanford-Binet was administered to the preschool child on the last visit, at which time parents were also given $10.00 for their participation. Descriptions of children's activities, interactions with the child, and the child's spontaneous utterances were tape recorded by the observer. In the final phase of data collection, the reading achievement of school-age children was assessed during the closing week of second grade. Reading "success" was defined as within one standard error or grade equivalent or higher on the Gray Oral Reading Test.

Families were labeled unsuccessful (N=7) or successful (N=8) based on their second-grade child's reading achievement. No significant differences between groups of second-grade readers were found when compared for IQ. Significant differences between these two groups were evident with regard to the preschool child's frequency of interactions with parents and siblings, favoring successful reading group families. Preschool children in successful families also exhibited more mature language than preschoolers in unsuccessful families, as measured by mean length of utterance. Five years following early home observations, the reading achievement of these preschoolers (N=14) was assessed, following the same classification criteria for successful and unsuccessful reading skill attainment used for their older siblings. A major finding was that in reading, 71.4% of the children agreed with the achievement of their older siblings; six were successful and eight were unsuccessful.

Comparison of preschool observational data and language measures revealed significant differences between the two groups. Successful readers had received seven times more encouragement than discouragement, and the unsuccessful readers had received 1.6 times more discouragement than encouragement for child-initiated verbal interactions with parents. The frequency of parental verbal interactions did not differentiate the two groups; however, when combined with sibling interactions, significant differences emerged. This finding suggested the importance of competent older siblings in providing verbal stimulation to their younger siblings. With the exception of IQ (nonsignificant), all other language and language-related variables revealed significant differences, favoring the successful reading group.

In summary, in a longitudinal study of a sample of low-income black families, Norman-Jackson (1982) was able to successfully predict (75%) younger siblings' reading achievement in second grade based on older siblings' reading performance when they were in second grade. Preschool children's language maturity was significantly related to primary reading achievement. Family experiences and activities as preschoolers differentiated those who would later learn to read successfully from those who would not. Statistical data and anecdotal reports supported the salient role of successful older siblings in younger siblings' later reading achievement. The similarity in achievement across siblings and intra-subject continuity in the development of language skills strongly supports the powerful and persistent influences of the family environment in children's development.

Taken together, evidence from a number of studies lends support to the hypothesis that family environmental variables do contribute to the learning disabilities exhibited by some children. Family disorganization, restricted or deleterious communication patterns, and early discouragement of verbal interactions, were associated with children's school-related learning difficulties. Although sample size was generally small, these studies have generated hypotheses to be explored in future research.

Experimental Field Studies

A limited number of experimental investigations have been conducted in order to identify child outcomes that are causally related to family experience and behavior. Hess (1981) has noted that family behavior often lies outside the range of experimental methods for either practical or ethical reasons. Nonetheless, some researchers have tried to manipulate selected forms of parental behavior to determine if these parental practices affect children's learning in a predicted direction. This approach differs from the large-scale parent training programs that manipulated many variables at once, making it difficult to determine what independent variables led to what outcomes (Henderson, 1981). A few studies have attempted to train parents on a more narrowly defined range of behaviors in order to establish more clearly defined causal linkages to child outcomes. The family variables chosen for manipulation have been suggested by descriptive research on family environments.

In one such study, Henderson and Garcia (1973) investigated the effects of parental influences on the question-asking skills of their young children. It was hypothesized that the children whose parents were trained and instructed to model, cue, and reinforce question-asking in their children would produce more questions in the targeted question-asking category (causal questions) than would a control child whose parents were not instructed to use these procedures. It was also hypothesized that experimental children would attain and maintain a higher level of question-asking throughout the baseline, instructional, and generalization conditions.

Sixty first grade children were randomly selected from an urban population of Mexican-American children residing in an economically disadvantaged area. Children were randomly assigned to experimental or control groups and pre- and post-measurement condition groups according to a Solomon four-group design. The final sample (after attrition) consisted of 19 experimental children (N=10 boys, 9 girls; ages 5-11 to 7-6 years) and 24 children in the control group (N=12 boys, 12 girls, ages 5-11 to 7-7 years). Two parallel sets of pictorial stimulus cards were used to assess children's ability to produce causal questions during pre- and post-measurement phases.

During the pre-treatment instructional phase, the experimenter modeled causal questioning for a series of pictorial stimulus cards and children's imitative responding to experimenter-modeled question-asking was assessed. Following the instructional phase, experimental mothers participated in five small group training sessions. Demonstrations, role-playing, and direct instruction were used to train mothers to increase the frequency of question-asking in their children and to shift question-asking from normal-physical questions (e.g., What color is it?) to causal questions (e.g., Why? or How Come?). Before and after each training session, mothers practiced procedures learned during the session with their children (10 minutes in length) and recorded data on children's questions. After the five training sessions and 10 practice sessions, experimental mothers were encouraged to use general question-asking to increase the frequency of causal questions only.

Results of data analysis (ANOVA) indicated significant between-group effects for the experimental treatment and significant within-group effects for trials. No interaction effects were significant. The main effects indicated that experimental children displayed significantly higher levels of causal questioning, compared to control children, for each phase of the study: baseline, instruction, and generalization. These results were later replicated in a similar study of a Papago native population (Henderson & Swanson, 1974).

Based on their findings, Henderson and Garcia (1973) concluded that parents who were given training in the use of modeling, cueing, and reinforcement procedures in interaction sessions with their children had a significant effect on children's causal questioning. They related the experimental training procedures to the natural family circumstances in which children's school performance is facilitated by the efforts of parents or siblings. Thus, these results lend support to a conceptual and causal link between a specific set of parent behaviors and related child outcomes.

A few anecdotal observations from the Henderson and Garcia (1973) study are noteworthy. Although mothers in the study were of low socioeconomic status, they were reported as highly motivated to participate in the program once the rationale and purpose became clear to them. These mothers, with relatively little formal education, learned and effectively used parenting skills related to the development of intellectual competence. The researchers also noted that prior to the study, few of the participants had library cards. By the end of the program, every mother in the experimental group had obtained library cards for the target child and other children in the family. Although card holding does not reflect card usage, the likelihood of library visits is no doubt increased.

Swanson and Henderson (1976) conducted a field experiment designed to increase children's interest in reading materials, an academic motive commonly valued by parents and educators. The design of the study was based on the principles of social learning theory, which emphasizes the role of modeling and differential reinforcement in human learning. It was hypothesized that mothers who were trained in procedures designed to influence children's activity preferences would have children who (a) showed an increase in their selection of reading materials over attractive alternatives in a standardized free-choice situation, and (b) displayed generalization of this preference to the classroom setting by choosing reading activities with a higher frequency than a control group of classmates.

The sample consisted of 20 native American Papago second-grade children. Mothers of these children had been involved in a different training program the previous year. Mothers of the 20 children were randomly assigned to two treatment groups of 10 in each group in order to keep the training groups small. Procedures for the experiment were based on the assumption that children would choose activities that had been reinforced through the approval or attention of a significant person in the home environment, i.e., the mother. Two Papago women were trained to serve as parent trainers and conducted the teaching sessions in the primary language of the participating mothers. Through modeling procedures, role-play, and prepared written lesson plans, all 20 mothers were taught to model the desired behavior of a mother and child informally examining and discussing reading materials. Mothers were also trained to demonstrate how a parent might reinforce the child for attending to reading materials in structured and free-choice situations. Parents were trained in either small group sessions or individually in their home if they had scheduling conflicts.

Parent instruction was divided into five lessons. The first lesson involved teaching parents the appropriate parent-child interaction sequence, i.e., mother and child examine and discuss a book. This was accomplished by modeling and role-playing procedures until all mothers were able to perform the desired behaviors. Following the lesson, mothers were instructed to conduct two training sessions with their child before the second training session. Parent-child sessions involved (a) performing the desired interaction sequence for a 10-minute period, and (b) observing the child for one hour following the session and recording the amount of time the child engaged in self-initiated reading materials. Each subsequent session increased the complexity and number of behaviors the mothers were required to master, e.g., verbal praise for selection and use of reading materials in structured and free-choice situations. Each lesson and parent-child follow-up session followed the same general format outlined above for lesson one. The researchers emphasized that in their experimental procedure, children were presented with reading materials in a highly valued situation (i.e., with the mother), but also provided with the opportunity to make choices and to be reinforced for selecting reading materials.

The effectiveness of the present intervention program was evaluated under two conditions: (a) a situational task in which children's choice behaviors were measured under conditions similar to the parent-child follow-up sessions, and (b) a free-choice time in the child's classroom, included as a measure of generalization effects. The latter condition included a control group. Observational data were collected on children's choices among an array of materials that included reading materials, blocks, and puzzles. Results of the data analysis (ANOVA) revealed a significant effect for trials, indicating an increased frequency of reading material selection in the free-choice situation, and thus an inferred increase in the value of reading materials. By the end of the training, nearly half of the children's self-selections were for reading materials. On the generalization task, experimental children selected reading materials more often than control children whose parents had not experienced training. Group training seemed to be more effective than individual training; there was a tendency for mothers with regular group attendance to have children who showed more interest in reading materials. Researchers attributed this to the possible effectiveness of multiple-models, i.e., parent trainer and peers, and to corrective feedback only possible in the group sessions.

Based on their findings, Swanson and Henderson (1976) concluded, "Parents may be successfully trained in skills required to influence the intellectual competencies and specific motives of their children" (p. 43). As Henderson (1981) later noted, there was very little reason for most parents on the Papago Reservation to read, and most homes contained little if any reading materials. The success of the parent training program in changing the value of reading that was communicated from parent to child via modeling and differential reinforcement strongly suggested a causal link between these parent behaviors and related child outcomes.

In summary, the field experiments described in this section have added to the accumulating evidence supporting the belief that parents significantly influence the behavior of their children, particularly their intellectual and academic achievement. Moreover, these studies emphasize the possibilities for affecting change in children's behavior through carefully designed programs that include specified sets of parent behaviors that are conceptually and operationally linked to desired child outcomes.

Summary and Conclusions

The search for environmental variables that significantly influence children's development has proceeded from large-scale epidemiological and longitudinal methods of inquiry to more fine-grained analysis of specific family processes. Taken together, there is clearly evidence for a complex network of interrelated family environmental variables that are associated with children's intellectual functioning, academic achievement, and affective development. These include process variables such as parents' educational and occupational aspirations for their children, parents' ability to organize and manage day-to-day family functions, communication patterns among family members and the quality of the language environment, and the visibility of parents as models for a variety of intellectual and interpersonal behaviors. Children's developmental outcomes have also been related to family structure and socioeconomic status variables, but when analyzed in combination with salient family process variables, these global descriptors generally lose significant predictive power. However, the relationship among these family process and family status variables and the mechanisms by which they influence child development is far from clear.

The studies reviewed in this chapter provide substantial evidence supporting an important link between family environmental variables and children's learning and behavior problems. Epidemiological studies in the areas of mental retardation, emotional disturbance, and learning disabilities have identified a number of environmental variables that increase a child's risk for these handicapping conditions. Most of the research on family processes and child outcomes has been conducted with nonhandicapped children, in a search for aspects of their immediate social and psychological milieu that are associated with the development of cognitive, social, and academic competencies. Their findings suggest a variety of salient parental and family attitudes and behaviors that, when absent or reduced in effectiveness, may be construed as risks for aberrant development. Family process studies that have compared samples of children with handicaps and their families with nonhandicapped children and their families also suggest family environmental risk factors, defined by their power to differentiate between the handicapped and nonhandicapped groups. Studies conducted exclusively with samples of handicapped children and their families have revealed environmental factors that differentiate between the performances of children within a relatively restricted sample; those features associated with lower performance levels suggesting risk conditions in the child's environment that may not only impede the handicapped child's development, but may also serve to dilute the effectiveness of educational interventions.

The methodology used in examining child-environment relationships has been quite diverse, although a few generalizations can be drawn from those studies reviewed. First, in-home parent interviewing and observational techniques, including a variety of rating scales and questionnaires, have primarily been used in studies attempting to assess multiple aspects of the family environment. In most investigations, one or possibly two home visits were conducted. Second, interviews were conducted predominantly with mothers or primary caregivers. This procedure is based on the belief that it is the mother who determines and/or reflects the intellectual and emotional tone of the family environment, and it is the mother who is most available for interviewing. Third, in most studies, family environmental variables have been related to the measured performance of only one child (natural offspring), with occasional attention to the influence of family variables on the performance or characteristics of other children in the family. This has been unfortunate since the few studies that examined family influences on child performance across time or across siblings suggest clues to continuities and discontinuities in the salience of certain environmental variables. Child characteristics, such as age and gender, appear to influence the dynamics of child-environment interactions, although their role is as yet unclear. Fourth, there has been little use of equivalent measurement instruments or techniques in assessing the relationship between identical or similar parent and child characteristics, e.g., reading skills of child and parent; locus of control of child and parent. Rather, researchers have examined the influence of related but indirect parent attitudes and behaviors to child outcomes. Perhaps inclusion of both indirect and direct measures of conceptually and operationally linked parent-child variables would yield more fruitful results.

The present study proposed to extend the knowledge of family environment-child performance relationships by assessing the family environment in terms of the risks it presents to children living within its influence. In this study, a family risk variable was defined as a measurable aspect of the child's family environment that is hypothesized to be associated with low levels of intellectual functioning, low levels of academic achivement, and/or personal-social difficulties. The present investigation expanded the scope of previous studies by examining multiple aspects of the family environment, including both status/situational and process variables, and their combined relationship to multiple aspects of child performance, including intellectual functioning, academic achievement, and affective development.

This study addressed the methodological limitations of family environment-child performance relationships in the following ways:

1. Assessment of the family environment through a parent interview/observation schedule that included both self-report and performance measures, the latter providing information on what skills the parent brings to the family environment. The interview/observation schedule also included measures of attitudes, beliefs, and affective states "that organize observable behavior and give it meaning" (Henderson, 1981, p. 211). The parent interview/observation schedule included measurement of potentially "alterable variables," thus subsuming a diagnostic-prescriptive protocol for individualized family programming.

2. Use of identical or functionally equivalent measurement instruments to assess the skills and characteristics of parent and child.

3. Assessment of children 4 to 19 years of age in order to examine the developmental dynamics of family environment-child performance relationships.

Hypotheses

The general hypothesis investigated was that the variation in family home environments is significantly associated with differences in children's developmental performance on measures of cognition, academic achievement, and affective development. Specifically, this investigation examined those aspects of the family environment that have been identified or hypothesized as deleterious influences, or "risks" on children's school-related performance. This investigation proceeded in two phases. In the first phase, families were differentiated into high- and low-risk groups on the basis of a risk index that included measures of family environmental process (e.g., maternal attitudes, social climate, etc.), as well as status/situational variables (e.g., perception of financial resources, health index, etc.). Multivariate analyses were conducted to determine the relationship between family risk status and children's developmental performance on measures of intellectual functioning, academic achievement, and affective characteristis. In the second phase, high- and low-risk groups were disbanded and all families were used to examine more closely the relationship between critical family environmental variables and children's performance at different ages. The following hypotheses were tested:

Hypothesis 1: Family risk status significantly differentiates the performance of children of different ages on measures of cognitive functioning, academic achievement, and affective development.

Hypothesis 2: Features of the physical, social, and psychological family environment that contribute to the general family risk status are differentially related to decrements in child performance measures of cognitive functioning, academic achievement, and affective development with increasing age.

Hypothesis 3: Features of the physical, social, and psychological family environment are related to the child's discrepancy in academic achievement, "discrepancy" defined as the difference between attained grade level to expected grade level for chronological age on measures of reading and mathematics achievement.

Chapter III

METHODOLOGY

As a means of investigating the relationship between family environmental variables and children's developmental performance, a sample of parents was administered a multicomponent family assessment instrument. Children in these families, ranging in age from 4 to 19 years, were administered a battery of cognitive, academic, and affective measures. For purposes of analysis, children were grouped into age "cohorts." The term "cohort" refers to individuals born in the same time interval and denotes groups of individuals who follow each other through formal institutions like the school, or informal institutions like the family (Cook & Campbell, 1979). For example, study children in the youngest age cohort, 4 to 6 years of age, were born between approximately 1976 and 1978; in the next oldest cohort, 6 to 10 years of age, children were born between 1972 and 1976, and so on. Children remained in their respective cohort group for each analysis. The use of cohorts and the procedures followed in the present study are detailed below.

Design

A model of multiple and interactive environmental influences on the developmental processes of children requires a research strategy that matches the complexity of the theory (Ricciuti, 1977). When the task is one of descriptive and explanatory analyses of developmental changes, the use of cohort-sequential designs has been recommended because they ". . . allow researchers to gather data describing the nature of intraindividual change, of interindividual differences in such change, and of the moderating influences of sociocultural context and time on these changes" (Lerner, 1978, p. 18). Cohorts are useful for experimental purposes because (a) some cohorts receive a particular treatment while preceding or following others that do not, and (b) it is often reasonable to assume that a cohort differs only in minor ways from its contiguous cohorts. Thus, the virtue of cohorts is that a "quasi-comparability" can often be assumed between cohort groups that share the same home or work environment (Cook & Campbell, 1979).

The cohort-sequential design described by Schaie (1965) employs longitudinal sequences for two or more independent cohorts examined simultaneously. In the present study, the longitudinal sequence is replaced by a single point-in-time study of successive age cohorts for comparison (see Figure 1). This design departs from traditional cross-sectional designs in that measurement occurs both within and between families.[1] The working assumption is that children in families, from youngest to oldest, can be viewed as representative of familial influences on the developmental processes over time and will thereby depict the changing nature of development and risk. In other words, the physical, social, and psychological milieu created by the family is in essence a "treatment." This assumption does not ignore the existence of individual differences, but suggests that the degree

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[1] It is important to note, however, that the sample of families studied did not contribute offspring to each successive age cohort and thus within-family comparisons could not be made.

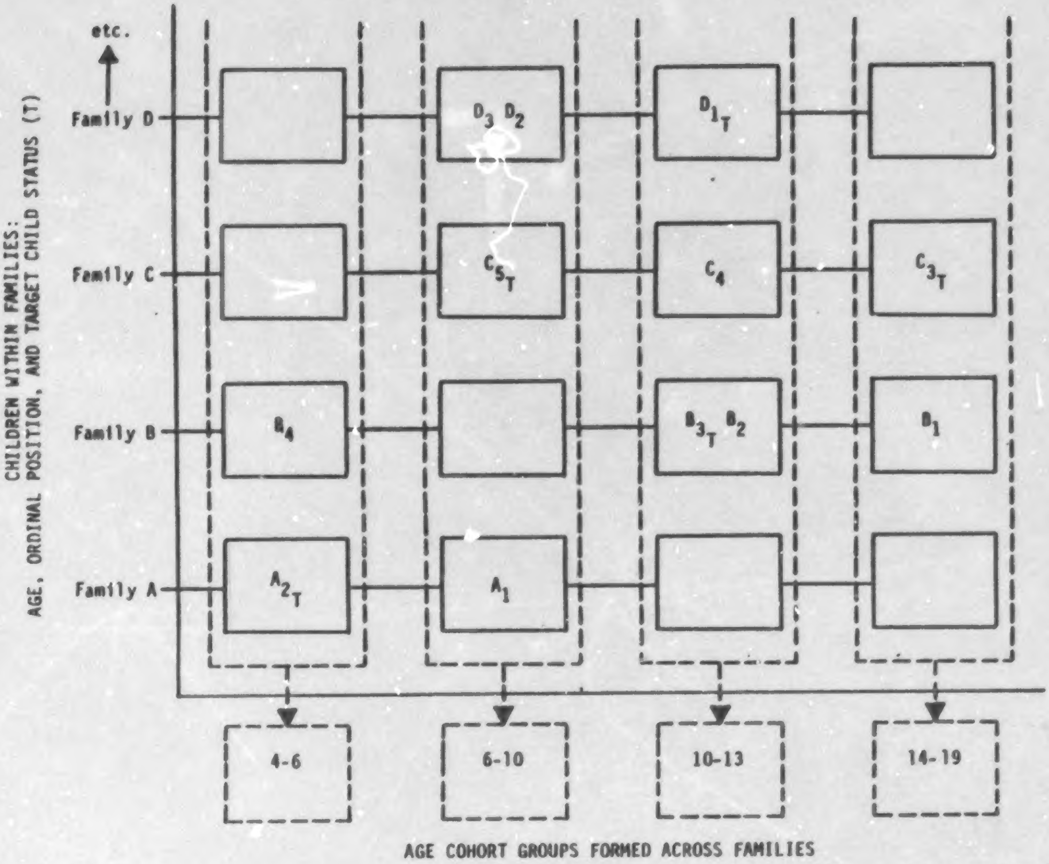
CHILDREN WITHIN FAMILIES:
AGE, ORDINAL POSITION, AND TARGET CHILD STATUS (T)
etc.
Family D
Family C
Family B
Family A
D_3 D_2
D_{1_T}
C_{5_T}
C_4
C_{3_T}
B_4
B_{3_T} B_2
B_1
A_{2_T}
A_1
4-6
6-10
10-13
14-19
AGE COHORT GROUPS FORMED ACROSS FAMILIES

Figure 1. Profile of Hypothetical Family Configurations and Formation of Across-Family Cohorts

of similarity among siblings will reveal similarity in the effect of the family processes over time. Support for this assumption has been drawn from studies by White and Watts (1973), Wilton and Barbour (1978), and Norman-Jackson (1982), which strongly suggest that common environments create strong pressures toward similar child development.

In summary, the adaption of Schaie's cohort-sequential design in the present study provided a developmental framework for studying the dynamic influences of family environmental variables and allowed examination of the differential effects on development due to variations in family environments. The observation of trends in developmental performance was also a function of this design. Other advantages of this design adaption included minimization of subject attrition and considerable savings of time and money.

Target Population

Participation was sought from families with children between 4 and 18 years of age who had been (a) formally identified by the school system as having "Exceptional Educational Needs (EEN)," according to the procedures outlined in Public Law 94-142 and Wisconsin Statutes, and had been diagnosed as having one of the following primary handicapping conditions: educable mental retardation, emotional or behavioral disturbance, learning disability, or speech/language disability; or (b) identified by the school system as requiring remedial help in reading or mathematics and were receiving services through district programs (e.g., extended kindergarten day) or ESEA Title I programs. Children with neurological or physical impairments that could account for their school-related problems were excluded from the sample. In other words, the target population was children who had been designated by the school system as in need of educational assistance because of learning or behavior problems that could not be related to neurological or physical impairments, and families of these children, including parents and siblings.

Recognition of learning and behavior problems by the school represents, in a sense, the manifestation of risk, i.e., prior to identification the child was presumably at high risk for problems. By targeting for study families with children whose problems were not associated with detectable constitutional difficulties, the possibility of identifying influential family environmental variables was enhanced. It was presumed that learning and behavior problems were less likely the result of organic pathology and more likely related to environmental variables.

Grouping children who exhibited a variety of school-related difficulties, rather than investigating "preformed" groups appeared to be a reasonable research strategy in light of existing evidence that suggested great variability in the identification, assessment, diagnosis, and placement of children within and across schools (Gajar, 1980; Kirp, 1974; MacMillan, 1977). Ysseldyke, Algozzine, Shinn, and McGue (1982) reported evidence suggesting that the learning disabilities category is primarily one of underachievement. These researchers compared the measured performance of a group of low-achieving students (not identified as LD) to school-identified LD children and found considerable similarity between the two groups; an average of 96% of the achievement scores were within a common range, and their performance on many subtests was identical. Thus, by studying this special need population of children and their families, regardless of categorical placement of the child, potential confounding school selection factors were minimized.

Procedures for Selection

The selection process to obtain a study population, as defined above, was to first establish a research relationship with the schools, including school boards, administrators, and teachers. Preliminary efforts suggested that this could be accomplished through individual contacts, small and large group meetings, and inservice sessions. The school systems that chose to participate are indicated in Figure 2. These included the Stoughton, De Soto, Viroqua, and Hillsboro school districts, all rural Wisconsin communities located 20 or more miles from the nearest metropolitan area.

Special efforts were made to enlist rural communities as field settings since most of the research investigating the relationship between family processes and child development has involved families from urban, highly industrial settings. The problems that face rural populations, particularly the poverty areas, indicate a reduced quality of life for a substantial number of children residing in these circumstances and a greater likelihood of health, educational,

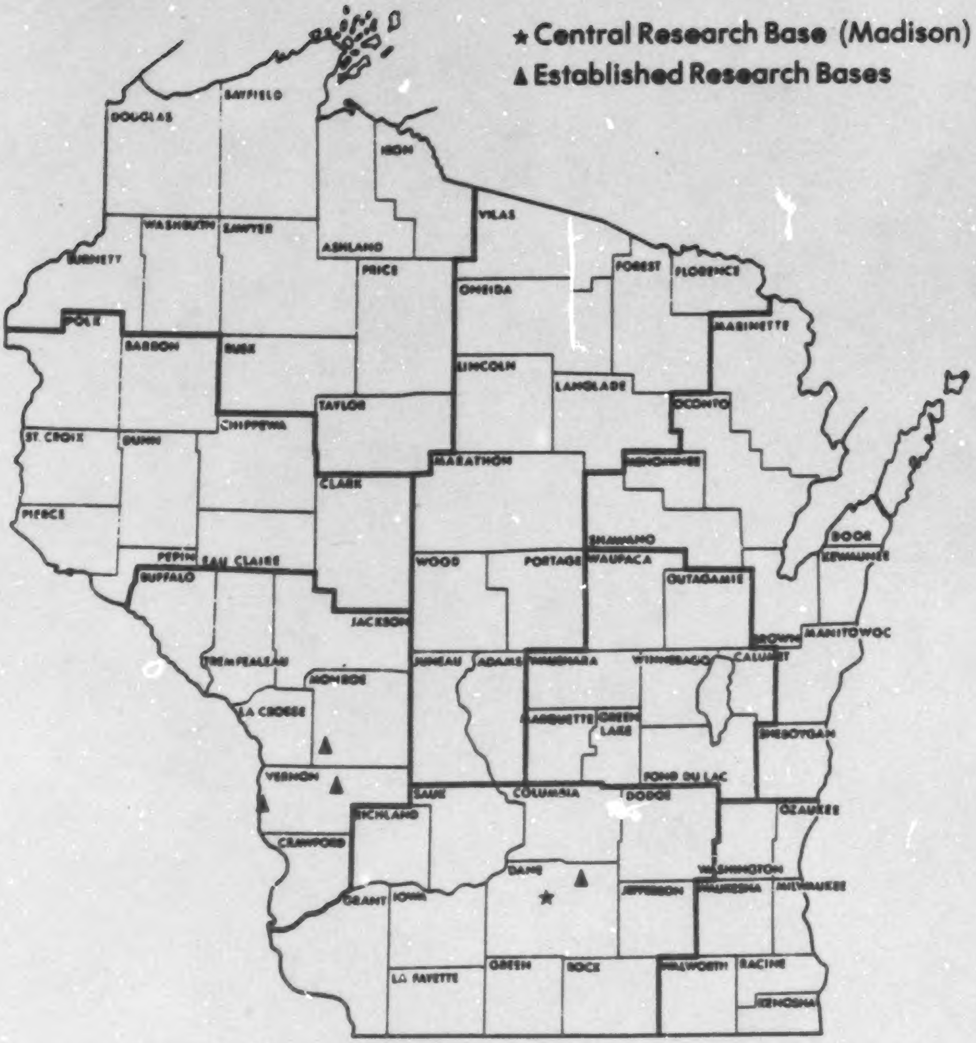
★ Central Research Base (Madison)
▲ Established Research Bases
DOUGLAS
BAYFIELD
IRON
ASHLAND
VILAS
WASHBURN
SAWYER
BURNETT
PRICE
FOREST
FLORENCE
ONEIDA
POLK
BARRON
RUSK
MARINETTE
LINCOLN
LANGLADE
TAYLOR
OCONTO
ST. CROIX
DUNN
CHIPPEWA
MARATHON
MENOMINEE
CLARK
PIERCE
SHAWANO
DOOR
KEWAUNEE
PEPIN
EAU CLAIRE
WOOD
PORTAGE
WAUPACA
BUFFALO
OUTAGAMIE
JACKSON
BROWN
MANITOWOC
TREMPEALEAU
JUNEAU
ADAMS
WAUSHARA
WINNEBAGO
CALUMET
MONROE
LA CROSSE
MARQUETTE
GREEN LAKE
SHEBOYGAN
FOND DU LAC
VERNON
SAUK
COLUMBIA
DODGE
OZAUKEE
RICHLAND
CRAWFORD
WASHINGTON
DANE
JEFFERSON
WAUKESHA
MILWAUKEE
GRANT
IOWA
GREEN
ROCK
WALWORTH
RACINE
KENOSHA
LA FAYETTE

Figure 2. Research Bases

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and social problems for families. A description of one field site, Stoughton, serves as an example.

In this community of 7,000 people: (a) there were over 350 school-age children classified as low income according to USDA guidelines; 25.3% of the Stoughton families reported incomes under $5,000; (b) compared to nine other non-urban districts in the same county, Stoughton had the highest percentage of one-parent families and the highest percentage of persons over 18 years of age reported as divorced or separated; (c) "pockets" of low quality housing, e.g., abandoned farm houses and a trailor court; and (d) two residential treatment centers and several group and foster homes. The Stoughton area population received on the average a higher percentage of assistance per family than any other area in the county (Richards & Davis, 1980). The other three field settings -- Viroqua, Hillsboro, and De Soto -- were smaller than Stoughton in population size and were located in Wisconsin counties having a substantially greater proportion of low-income families (Vernon, Monroe, and Crawford counties).

According to the Census of Population and Housing, 1980, more than half of the persons in these counties were employed as farmers, suggesting a high degree of physical and social isolation, and generally greater economic instability. More than a quarter of the population in each county (over 18 years of age) had not completed high school. Between 8% to 10% of the families in each county reported incomes under $5,000. Thus, these four field settings offered a unique opportunity to examine important aspects of families residing in rural areas.

The second step of the selection process was to enlist participation of target families. The initial "screen" for study families was conducted by the schools based on the subject criterion described above. Those families with a child meeting the subject criterion were sent a letter soliciting their participation in the study. Responses were then returned to school personnel, and those parents indicating interest were contacted and scheduled for home visits. Full or partial participation by individual families was strictly voluntary. Each family was offered their choice of a small educational game following their participation in the first home visit.

Signed parental permission and release forms were obtained before administration of child assessment measures and review of official school records (Appendix A). These procedures ensured adherence to the confidentiality mandated by the Freedom of Information Act.

Sample Characteristics

The necessary sample size was estimated at 94 families in order to obtain a minimum of 30 children per cohort (see Figure 1). Data from the March 1979 Census was used to derive the family figure. A quota sampling procedure was followed until each cohort contained a minimum of 30 children, with the exception of the first cohort (ages 4 - 6 years) which contained 22 children. The sampling procedure yielded 54 children in the second cohort (ages 7 - 9 years)[2]; 64 children in the third cohort (ages 10 - 13 years); and 42 children in the fourth cohort (ages 14 - 19 years). These age cohorts correspond roughly to preschool-kindergarten (cohort 1), grades 1 - 3 (cohort 2), grades 4 - 8 (cohort 3), and grades 9 - 12 (cohort 4). Descriptive characteristics of each of the cohorts are presented in Table 2.

Each cohort was composed of children from the regular education program of the school, children identified as having exceptional educational needs (EEN), and children identified as needing remedial help in reading or mathematics. The proportions of children representing each of these groups varied across cohorts, but roughly 26% to 31% of the children in each cohort had exceptional needs, 17% to 43% had remedial needs, and 31% to 53% were having their needs met through the regular educational program. Across the total sample of children, 33% had exceptional needs, 24% had remedial needs, and 43% were in the regular school program. No children in the study sample had evidence of organic pathology which could account for their learning and/or behavior difficulties. The composition of each cohort according to educational need is described in Table 3.

Table 2

Descriptive Characteristics of Cohorts 1, 2, 3, and 4

Cohort	n	# of Males	# of Females	Age Range (yr,mo)[a]	Median Age	Grade Range[b]
1	22	12	10	4-2 to 6-10	6-1	Early Childhood (EEN) and Kindergarten
2	54	30	24	6-7 to 10-0[c]	8-4	1 to 4(5)
3	65	27	37	10-1 to 13-11	11-9	4(11) to 8(6)
4	42	19	23	14-0 to 19-11	15-9	8(9) to 12
Total	182	88	94	4-2 to 19-11	10-11	EC:EEN to 12

[a] Age figures represent chronological age on the day of administration of the Wechsler Intelligence Scales; $\geq$ 15 days have been rounded to the next month and 12 months to the next year.

[b] Formation of cohorts by age resulted in some overlap in grade range; the number of children in overlapping grades in each cohort appears in parentheses.

[c] Overlap in age range between Cohorts 1 and 2 was the result of 5 children being included in Cohort 2 who were between 6- and 7- years of age and in grade 1; Cohort 1 included only preschool and kindergarten children.

Table 3

Number of Students Per Age Cohort by Educational Need Category

		EEN (n=59)[a]						Remedial (n=44)[b]				
Cohort	n	EC	EMR	TMR	LD	ED/BD	S/L	Title I Reading	Title I Math	District Reading	Other	Regular (n=79)
1	22	5	1	0	0	0	9	1	0	0	0	6
2	54	0	1	0	4	3	6	15	2	6	0	17
3	64	0	2	1	10	4	0	5	4	4	0	34
4	42	0	6	0	2	5	0	4	1	0	2	22
Total	182	5	10	1	16	12	15	25	7	10	2	79

[a] Primary Exceptional Educational Need (EEN) category as identified by the school system:

EC = Early Childhood Special Education
EMR = Educable Mentally Retarded
TMR = Trainable Mentally Retarded
LD = Learning Disabilities
ED/BD = Emotional Disturbances/Behavioral Disorders
S/L = Speech/Language

[b] Primary remedial need category as identified by the school system; "Other" refers to general remedial programs, e.g., dropout prevention programs.

Sixty-nine families contributed to the sample of 182 children who participated in the child assessment phase of the study. Seven additional families completed the family interview but withdrew from further participation. Reasons for withdrawal were varied, e.g., family vacation, parent concern about removing child from class, parental disagreement about further participation. No clear pattern of nonparticipation factors was apparent.

A number of sociodemographic characteristics were obtained for families in the study sample. Ninety-two percent of the sample were two-parent households (spouses), with 8% of the families headed by a single parent (mother). Yearly family incomes greater than $20,000 were reported for 55% of the sample and 20% reported incomes ranging from $10,000 to $20,000. Twenty-five percent of the families reported incomes less than $10,000, which was below the current poverty level for a family of four. Fifty-six percent of the mothers and 84% of the fathers were employed outside the home. A substantial proportion of the mothers completed high school (90%) and went on for additional education and/or vocational training (56%). Similarly, 91% of the fathers completed high school and 64% reported additional education and/or vocational training. Stoughton contributed the highest proportion of families to the study sample (72%), followed by Hillsboro (13%), De Soto (8%), and Viroqua (7%).

Research Variables and Instrumentation

Characterization of a population at risk is largely determined by the investigator's preference for a specific etiological model (Garmezy, 1974). By combining etiological models of childhood learning and behavior problems and their associated risk factors (epidemiological correlates), the framework for a family risk protocol was established.

Previous research, specifically the work by Heber and Garber (Heber & Garber, 1975; Garber & Heber, 1981; Garber & Heber, 1982a, 1982b), Ramey and associates (Ramey, Collier, Sparling, Loda, Campbell, Ingram, & Finkelstein, 1976; Ramey, Mills, Campbell, & O'Brien, 1975; Ramey & Smith, 1976), and Badger (1971) used combinations of the following eight variables to indicate at-risk status of family functioning: (a) socioeconomic status, (b) maternal IQ, (c) quality of the home environment, (d) sibling functioning, (e) literacy, (f) number of children, (g) spacing of children, and (h) parental attitudes of hopelessness or negativism toward self and others. It has become increasingly clear, however, that families who are homogeneously grouped according to characteristics generally described (e.g., socioeconomic status, family configuration, etc.), upon closer examination differ considerably in the types of physical, social, and psychological environments created in the home. Significant variations in child performance within seemingly homogeneous population subgroups suggested a greater need to attend to family variables that may affect the experience of the child across the span of development. Within the context of educational intervention, the investigation of salient family variables that may facilitate or impede the success of special programs becomes an equally important concern. Thus, this study included both identified and hypothesized family risk variables.

Table 4 lists the family variables employed in the present study and the method of measurement. The combination of instruments that were selected integrated clinical and standardized methods of measurement in order to gain a fuller understanding of family environmental characteristics and processes. Instruments were chosen based on three general criteria: (a) proven sensitivity to differences among families, (b) appropriateness of psychometric characteristics, and (c) feasibility for use in a school-based family outreach project; "feasibility" referring to instruments that could be used by school personnel (with minimal psychometric training), required minimal training for proper administration, and required a minimal amount of time to administer. Instruments were also considered feasible if they could be used to develop techniques for assessment that were within the realm of authorized school procedures.

Table 4 includes family process and family status/situational variables. Items from a variety of instruments were selected or adapted in constructing a comprehensive family interview/observation schedule to tap family variables. A subscale of the Home Observation for Measurement of the Environment-HOME (Caldwell & Bradley, 1978)

Table 4

Description of Family Variables and Method of Measurement

A. Family Process Variables

1. Quality of the language/learning environment
    a. Quality of the home learning processes (HELPS)
    b. Verbal skills of primary caregiver (PPVT-R)
    c. Reading skills of primary caregiver (R/EAL)
    d. Cognitive problem-solving skills of primary caregiver: Error score (MFFT)
    e. Cognitive problem-solving skills of primary caregiver: Latency score (MFFT)
    f. Attitudes toward child rearing and education (PMS)
    g. Achievement orientation (FES)
    h. Intellectual-cultural orientation (FES)
    i. Verbal problem-solving skills of primary caregiver: Discipline (Family Interview Schedule)

2. Quality of the social-emotional environment
    a. Harmony and quality of parenting (HQRS)
    b. Locus of control of primary caregiver (Nowicki-Strickland Scale)
    c. Anxiety of primary caregiver (MAACL)
    d. Depression of primary caregiver (MAACL)
    e. Quality of informal social network (Family & Friends)
    f. Cohesion (FES)
    g. Expressiveness (FES)
    h. Conflict (FES)
    i. Independence (FES)
    j. Active-recreational orientation (FES)
    k. Moral-religious emphasis (FES)
    l. Organization (FES)
    m. Control (FES)

B. Family Status/Situational Variables (all measured through Family Interview Schedule unless otherwise indicated)

1. Occupational status (Revised Duncan Index)
2. Family income
3. Educational attainment of mother
4. Educational attainment of father
5. Marital stability of primary caregiver
6. Family health status
7. Availability of educational resources in the home
8. Housing density (person per room ratio)

9. Quality of the physical home environment (HOME)
10. Quality and safety of the residential environment (HQRS)
11. Quality of the residential area (HQRS)
12. Residential stability

was selected as a measure of the quality of the physical home environment. A measure developed for use with families of handicapped children, the Home Quality Rating Scale-HQRS (Meyers, Mink, & Nihira, 1977), was adapted for use in the present study. Both the HOME and HQRS were observational inventories completed after visits to the home. The Henderson Environmental Learning Process Scale-HELPS (Henderson, Bergan, & Hunt, 1972) and Parental Modernity Scale-PMS (Schaefer & Edgerton, 1981) were rating scales completed by the parent. The Family Environment Scale-FES (Moos & Moos, 1981) was a parent questionnaire that yielded 10 different aspects of the "social climate" of the home: (a) Cohesion, (b) Expressiveness, (c) Conflict, (d) Independence, (e) Achievement Orientation, (f) Intellectual-Cultural Orientation, (g) Active-Recreational Orientation, (h) Moral-Religious Orientation, (i) Organization, and (j) Control. The Nowicki-Strickland Scale (Nowicki & Duke, 1974a) was designed to measure an adult's "locus of control," the degree to which attribution of causality of behavior is made either to oneself or to sources external to oneself. Four performance measures were also included: Peabody Picture Vocabulary Test-Revised-PPVT-R (Dunn & Dunn, 1981), Reading/Everyday Activities for Life-R/EAL (Lichtman, 1978), Matching Familiar Figures Test-MFFT (Kagan, 1965), and the Multiple Affect Adjective Checklist-MAAC (Zuckerman & Lubin, 1965). The psychometric characteristics of each of the instruments and scoring worksheets developed for use in the present study are provided in Appendix B.

A number of additional family process and status/situational variables were of interest and measurement instruments were developed for use in this study and other family environmental research studies to be carried out through the Rehabilitation Research and Training Center in Mental Retardation, University of Wisconsin-Madison. "Family and Friends" (Maykut & Garber, 1981) was developed to measure the quality of the family's informal social network. Epidemiological research has begun to validate the role that social support may play in "buffering" the individual from the effects of stress (Cassel, 1974; Cobb, 1976). Social network analysis provides a way of examining an individual's social ties across a range of settings. More importantly, the linking of social support to various aspects of psychological adaption offers a theoretical base for developing broad-based preventive interventions (Mitchell, 1980). "Family and Friends" was designed to measure various social network characteristics, including structural characteristics (e.g., size, density), characteristics of component linkages (e.g., multidimensionality, reciprocity), and the normative context of the relationship (e.g., family, relative, friend). The instrument was composed of six tasks that attempted to assess the quality (supportiveness) of the individual's social network. The major supportive functions of informal social ties were reflected in the four picture frames of the "Family and Friends" picture card, which was used to assist the parent with certain tasks. The supportive functions illustrated by the picture frames included: (a) emotional support, (b) task-oriented assistance, (c) maintenance of a social identity, and (d) access to new and diverse social contacts and information (Mitchell & Trickett, 1980). Individual responses to each of the six tasks were recorded by the parent on prepared response sheets. A rating procedure was derived for assessing the quality of the parent's social network. The total quality score was the sum of the ratings for: (a) size of the social network, (b) average quality of relationships, (c) normative context of relationships, and (d) network density. The "Family and Friends" picture card and worksheet for obtaining ratings are presented in Appendix C.

Disciplinary techniques used by parents have long been an area of investigation in studies of child development (Sears, Maccoby, & Levin, 1957; Williams & Smith, 1974; Yarrow, Campbell, & Burton, 1968). In order to obtain a measure of parental control techniques through interviewing, an approach known as "verbal problem-solving" (Ayer, 1970) was adapted for measuring this family process variable. Parents were read aloud two analogues, each clearly depicting an incidence of children's misbehavior, and were asked a series of questions following each analogue: (a) What are all the things you might do? (b) Are there some things other parents might do? (c) which one of these things would you do? (d) What would happen then? Responses to these questions were rated for effectiveness of approach to the disciplinary problem. The effectiveness ratings (0,1,2,3) were determined from a large sample of parent responses to the questions, which reflected a continuum of approaches to dealing with tho children's misbehavior. The two disciplinary analogues and their respective rating scales for effectiveness of approach are detailed in Appendix D.[3]

The family's health status was also hypothesized as an important risk variable and a variety of interview questions were developed to tap this family variable. Questions probed health complaints and conditions of family members, sensory and physical impairments, the family's history of hospitalization and health care, and smoking habits of family members. Cue cards listing common health complaints and conditions were used to assist the parent in answering these questions. Six health factors were rated from the information provided by the parent: (a) health conditions, (b) health complaints, (c) sensory/physical problems, (d) health habits, (e) health care, and (f) perceived quality of health care. The sum of the health factor ratings was used as an index of family health status. The Family Health Index Worksheet used to quantify the interview information is presented in Appendix E.

A measure of the availability of educational resources in the home was also included as an important status/situational variable. Through interview questions and observations made by the home interviewer, a cumulative index of educationally relevant items (e.g., dictionary, record player, children's reading materials, gross motor toys and equipment) was obtained for each family home environment (Appendix F).

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[3] Directions are also included for determining a "range" score, or the number of unique, relevant responses offered by the parent, although this score was not included among the variables in the present study.

Interview questions were also developed to yield information regarding other important status/situational variables. Employment questions were specifically constructed to yield the information necessary to determine a Socioeconomic Index of Occupational Status (Stevens & Featherman, 1980). Use of an occupational index versus a socioeconomic index such as Hollingshead's Two-Factor Index follows the recommendations of Mueller and Parcel (1981). These researchers recommended the use of separate occupational, educational, and income status variables, since the latter two characteristics correlate only moderately with occupation-based scales. Stevens and Featherman (1980) have offered a current revision of Duncan's Socioeconomic Index (SEI), a widely used indicator of occupational ranking based on data from the 1950 Census. The Revised Socioeconomic Index of Occupational Status (MSEI2) has been recommended for use in child development studies and when studying relatively small groups (Featherman, personal communication). The procedure for determining an individual's Occupational Status (MSEI2) is outlined in the Hauser and Featherman (1977) and requires that an individual's 2-digit Occupational Census Code be determined. Appendix G provides the MSEI2 scores for Occupational Census Codes and the Occupational Status Coding Worksheet used in the present study.

Measures of family income, parent's educational attainment, marital stability, housing density, and residential stability were also obtained through structured interview questions. The response scoring for each of these family status/situational variables is described in Appendix H.

The final step in family instrumentation was to construct an interview schedule that incorporated all of the measurement instruments and interview questions described above into a format that was easy to administer and facilitated participation by the parent. The instrument developed for this task was called simply, the Family Interview Schedule (Maykut & Garber, 1981). The Family Interview Schedule was designed for individually interviewing up to three adults who were identified as "Mother/Mother Figure," "Father/Father Figure," and "Other Adult." The procedure established in the present study was to schedule the first home visit with the mother and at the home visit ask, "Who is the primary caregiver for the children living in this home? That is, who has the major responsibility for caring for the children?" The primary caregiver was then given the entire Interview Schedule. The Family Interview Schedule also provided directions for completing a reduced interview schedule with adults in the home indicated as secondary caregivers.

The final form of the Family Interview Schedule (Appendix I) was the result of a three-step pilot study that included families of different socioeconomic status, geographic location, number of children, and educational needs of children (EEN or regular education). In the first step, four families were interviewed using the initial form of the Family Interview Schedule and each interview included an observer. The interview sessions were critically analyzed in terms of content, mode of questioning, provision for answering, recording responses, and nature of the interviewer-respondent interaction (e.g., intrusiveness of questions). Changes in the content of the Family Interview Schedule were made accordingly. At this point, a Parent Answer Booklet (Appendix J) and Post-Interview Observation Form (Appendix K) were also added.

The second step of the pilot study generally followed the process outlined above with the revised and new materials. Critique of the revised Family Interview Schedule and accompanying materials resulted in minor structural changes (e.g., additional space for comments, reordering items, etc.). The final form of the Family Interview Schedule was administered to two different families with satisfactory results.

In order to complete the entire Family Interview Schedule, an interviewer needed all of the following items:

1. Family Interview Booklet (Appendix I)
2. Parent Answer Booklet (Appendix J)
3. Family and Friends Picture Card (Appendix C)
4. Cue Cards #1 and #2 (Appendix L)
5. Peabody Picture Vocabulary Test-Revised Picture Plates
6. Peabody Picture Vocabulary Test-Revised Answer Form
7. Reading/Everyday Activities in Life Answer Booklet
8. Reading/Everyday Activities in Life Cassette Tape
9. Cassette tape player
10. Matching Familiar Figures Test Picture Plates
11. Stopwatch or wristwatch with stopwatch functions
12. Post-Interview Observation Form (Appendix K)
13. Pencils, pens, markers

Specific instructions for administering the entire Family Interview Schedule are included in A Training Manual for Implementing a School-Based Family Outreach Project: Assessing the Needs of Families (Final Project, Grant No. G008101030, U.S. Department of Education) by Maykut (1983).

Table 5 lists the child variables employed in the study and the method of measurement. Instruments were chosen for their psychometric characteristics and for the availability of functionally equivalent forms across age groups (Appendix M). The Wechsler Scales and Peabody Picture Vocabulary Test-Revised were commonly used measures. Less well known were the Self-Observation Scales (Stenner & Katzenmeyer, 1974), the Nowicki-Strickland Locus of Control Scales

Table 5

Description of Child Variables and Method of Measurement

A. Child Variables

1. School-age children (Grades 1-12)

    a. Intellectual functioning-Verbal (Wechsler Intelligence Scales)
    b. Intellectual functioning-Performance (Wechsler Intelligence Scales)
    c. Intellectual functioning-Full Scale (Wechsler Intelligence Scales)
    d. Receptive vocabulary (PPVT-R)
    e. Reading achievement (Woodcock-Johnson Psychoeducational Battery)
    f. Reading achievement grade discrepancy
    g. Mathematics achievement (Woodcock-Johnson Psychoeducational Battery)
    h. Mathematics achievement grade discrepancy
    i. Self acceptance (Self Observation Scales)
    j. Locus of control (Nowicki-Strickland Scale)
    k. Cognitive problem-solving: Error score (MFFT)
    l. Social competence (Gesten Scale)

2. Preschool/Kindergarten children

    a. Intellectual functioning-Verbal (Wechsler Intelligence Scales)
    b. Intellectual functioning-Performance (Wechsler Intelligence Scales)
    c. Intellectual functioning-Full Scale (Wechsler Intelligence Scales)
    d. Receptive vocabulary (PPVT-R)
    e. Academic readiness (Cooperative Preschool Inventory
    f. Self acceptance (Self Observation Scales)
    g. Cognitive problem-solving: Error score (KRISP)
    h. Social competence (California Preschool Social Competency Scale)

3. Status characteristics - All children

    a. Age
    b. Gender
    c. Grade (1981-82)
    d. General educational target group
        (1) Exceptional Educational Needs (EEN)
        (2) Remedial reading and/or mathematics

    (3) Regular education
- e. Specific educational target group (EEN), if appropriate
    - (1) Early childhood: EEN
    - (2) Educable mental retardation
    - (3) Trainable mental retardation
    - (4) Learning disabilities
    - (5) Emotional/behavioral disturbances
    - (6) Speech/language disorders

for Children (Nowicki & Duke, 1974b; Nowicki & Strickland, 1973), the Social Competency Rating Scale - Teacher Rating (Gesten, 1976), and the Matching Familiar Figures Test (Kagan, 1965). Achievement measures included three reading and two mathematics subtests from the Woodcock-Johnson Psychoeducational Battery (Woodcock & Johnson, 1977): (a) letter-word identification, (b) word attack, (c) passage comprehension, (d) calculation, and (e) applied problems. Results from the Woodcock-Johnson achievement subtests were also used to derive "discrepancy" scores for reading and mathematics achievement; "discrepancy" defined as the difference between attained grade level determined from achievement test performance, to expected grade level for chronological age[4].

Although equivalent forms were available for some measures (e.g., Wechsler Scales, PPVT-R, SOS Scales), performance variables for preschool/kindergarten children were somewhat different and are listed separately in Table 5. The Preschool Inventory (Caldwell, 1970) was used as a measure of academic readiness and younger children's social competence was assessed by the California Preschool Social Competency Scale (Levine, Elzey, & Lewis, 1969). Younger children's cognitive problem-solving was measured by the Kansas Reflection-Impulsivity Scale for Preschoolers-KRISP (Wright, 1971), an easier task modeled after the MFFT (Kagan, 1965). In general, preschool/kindergarten children had difficulty understanding and

[4] Expected grade level for chronological age was obtained from the Woodcock-Johnson Psychoeducational Battery, Table Y-Average Grade Placement for Age (Woodcock & Johnson, 1977; Appendix N).

completing the Preschool-Primary Form of the Nowicki-Strickland Locus of Control Scales (Nowicki & Duke, 1974b), and thus it was dropped as a measure for the younger children.

Status characteristics for all children were obtained with parental permission from school records. "General educational target group" referred to three educational need groupings: (a) Exceptional Educational Needs (EEN), (b) remedial educational need, or (c) regular education program (no special needs). "Specific educational target group" referred to the categorical programs for EEN children, such as learning disabilities, educable mental retardation, emotional disturbance, and/or speech/language disorders.

Data Collection

Interviewer's training. Prior to conducting interviews, student interviewers were trained to administer each part of the Family Interview Schedule. Training was conducted in five steps: (a) general orientation to the study and detailed review of each part of the interview schedule; (b) viewing a prepared videotape of a pilot study family interview followed by a review session; trainees also completed a Post-Interview Observation Form based on their impressions of the family from the videotaped interview; (c) personal study of all materials, including interview questions and test/task manuals and materials; trainees also took each test/task included in the interview schedule; (d) role-playing each test/task included in the interview schedule with two trained persons; and (e) conducting a practice Family Interview Schedule in its entirety. The observational ratings completed by interview trainees, based on the videotaped interview, were compared to the actual interviewer's observational ratings. A minimum of 80% interobserver agreement on key observational ratings was required for training completion.

Family interviewing. Families indicating interest in participating in the study were contacted by phone or by a personal visit if they had no phone. If they were still interested, a home visit was scheduled at their convenience. The entire Family Interview Schedule was conducted with the primary caregiver, which in the majority of families was the mother. In the present sample, only one mother identified the father as the primary caregiver, and in this case the father completed the entire Interview Schedule. Secondary caregivers (usually fathers) were asked to participate in a reduced interview schedule, comprised of general background information (e.g., education, employment, marital history, etc.), reading test (R/EAL), locus of control scale (Nowicki-Strickland Scale), verbal skills measure (PPVT-R), family social climate scale (FES), and cognitive problem-solving task (MFFT). A small proportion (approximately 20%) of the fathers participated in the reduced interview schedule. This small sample was used to examine agreement in parents' responses.

The amount of interview time and the number of home visits required to complete the Family Interview Schedule varied greatly due to such things as fatigue, disinterest, unexpected interruptions, cancellations, vacations, etc. Although most scheduled visits were conducted, it was not unusual for families to cancel a visit because of family conflicts, e.g., unexpected company, illness of a child, etc. On the average, approximately two to three interview sessions were necessary to complete the entire Interview Schedule with one parent. An additional 1-1/2 hours were required if another caregiver was interviewed with the reduced interview schedule.

Child testing. Parental permission for child testing was obtained during the first home visit (Appendix A). At this time, parents received a copy of parental rights related to child participation, testing, and confidentiality of student records (Appendix O). Child testing was conducted during school hours, in a place designated by each building principal. Children were scheduled for testing in cooperation with the classroom teacher and building principal. Tests were administered by graduate students who had received appropriate psychometric training and were closely supervised by the author, who is a licensed school psychologist for the State of Wisconsin.

Data Analysis

Hypothesis 1. This hypothesis stated that family risk status differentiated the performance of children across a number of child performance variables, and that the relationship between family risk status and child performance varied as a function of age. Hypothesis 1 was operationalized by the following statistical hypotheses:

H_0: $\tau_1 = \tau_2 = 0$ (no factor 1 effects)

H_1: At least one $\tau_\ell = 0$

where factor 1 = family risk status (high vs. low)

τ_1 = effect of level 1 of factor 1 (high risk)

τ_2 = effect of level 2 of factor 1 (low risk)

ℓ = level of factor 1

$\alpha = .05$

H_0: $\beta_1 = \beta_2 = B_3 = 0$ (no factor 2 effects)

H_2: At least one $\beta_k = 0$

where factor 2 = chronological age group (cohort)

β_1 = effect of level 1 of factor 2 (cohort 2)

β_2 = effect of level 2 of factor 2 (cohort 3)

β_3 = effect of level 3 of factor 2 (cohort 4)

k = level of factor 2

$\alpha = .05$

H_0: $\gamma_{11} = \gamma_{12} \cdot \cdot \cdot \gamma_{gb}$ (no interaction effects)

H_3: At least one $\gamma_{\ell k} = 0$

where γ_{11} = interaction of level 1 of factor 1 with level 1 of factor 2

γ_{12} = interaction of level 1 of factor 1 with level 2 of factor 2

$\gamma_{\ell k}$ = interaction of ℓl th level of factor 1 and kth level of factor 2

$\alpha = .05$

The formation of cells in this quasi-experimental design is represented in Figure 3. A two-step procedure was used to test Hypothesis 1 for school-age children. In step one, two groups of families, high-risk and low-risk, were formed through use of a discriminant function analysis. Families were assigned a priori to a high- or low-risk group, i.e., group membership became a "dummy" criterion variable. A discriminant function analysis was used to determine which family risk variables maximally discriminated between

	Cohort 1	Cohort 2	Cohort 3	Cohort 4
High Risk	X_{111} X_{112} . . . X_{11k}	X_{121} X_{122} . . . X_{12k}	X_{131} X_{132} . . . X_{13k}	X_{141} X_{142} . . . X_{14k}
Low Risk	X_{211} X_{212} . . . X_{21k}	X_{221} X_{222} . . . X_{22k}	X_{231} X_{232} . . . X_{23k}	X_{241} X_{242} . . . X_{24k}

[a] Cohort 1 was analyzed separately and is included here only for explanatory purposes.

X_{ijk} where

i = 1 High Risk
= 2 Low Risk

j = 1 Cohort 1
= 2 Cohort 2
= 3 Cohort 3
= 4 Cohort 4

k = 1, 2....k Child Performance Variables

Figure 3. Formation of Cells for Family Risk Level x Age Cohort MANOVA[a]

the two groups. Step two in the test of Hypothesis 1 was to conduct a two-way multivariate analysis of variance (MANOVA), using high or low family risk group membership and child's chronological age (cohort membership, omitting preschool/kindergarten cohort) as the independent variables, and child performance measures as the dependent variables.

The preschool/kindergarten cohort (Cohort 1) was analyzed separately using Hotelling's two-sample T^2, a multivariate test of the significance of the difference between means (Johnson & Wichern, 1982) due to nonequivalent measures for achievement (academic readiness versus reading and mathematics) and social competency. The statistical hypothesis for the test of no difference between the centroids of two multivariate populations was shown by

H_0: $\mu_1 = \mu_2$

H_1: $\mu_1 = \mu_2$

where $\alpha = .05$

Hypothesis 2. A multivariate linear regression model was used to test Hypothesis 2, in order to examine more closely the relationship between child performance variables at different ages and those family risk variables identified in the discriminant function analysis which accounted for the most variance. The statistical subhypotheses under test for Hypothesis 2 were (a) the joint test of no linear relationship between the identified set of eight family risk variables and the set of child performance variables that showed significant declines with increasing age, i.e., lower performance levels for the older versus the younger cohort, and (b) the multivariate test of the equality of the regression equations for the older and the younger cohorts. Operationally defined,

Cohort 2 (young):

H_0: $\beta_p = 0$ (no linear relationship)

H_1: $\beta_p = 0$

where β = vector of regression coefficients

p = child performance variables - Cohort 2

$\alpha = .05$

Cohort 4 (old):

H_0: $\beta_{p'} = 0$ (no linear relationship)

H_2: $\beta_{p'} = 0$

where β = vector of regression coefficients

p' = child performance variables - Cohort 4

$\alpha = .05$

Cohort 2 (young) and Cohort 4 (old):

H_0: $\beta_p = \beta_{p'}$ (equality of regression coefficients)

H_3: $\beta_p = \beta_{p'}$

where β = vector of regression coefficients

p = child performance variables - Cohort 2

p' = child performance variables - Cohort 4

$\alpha = .05$

A three-step procedure was used to test these hypotheses. Prior to step one, all high- and low-risk groups were disbanded and cohort membership (child's age) became the criterion for inclusion in the study sample. Families were included in only those cohort analyses to which they contributed an offspring. In step one, the performances of children in Cohort 2 (ages 6 years, 7 months to 10 years, 0 months) or "young" cohort were compared to the performances of children in Cohort 4 (ages 14 years, 0 months to 19 years, 11 months) or "old" cohort, a cross-sectional approximation to following the performance of the same children longitudinally (Cook and Campbell, 1979). Hotelling's T^2 statistic was used to test the difference between the two cohorts on measures that revealed mean performance declines.

In step two, the child performance variables showing significantly lower levels of performance for Cohort 4 (dependent variables) and the family risk variables identified in the test of Hypothesis 1 (independent variables) were applied to a multivariate linear regression model. A multivariate regression analysis was conducted separately for Cohort 2 (young) and Cohort 4 (old), each multivariate analysis yielding separate multiple regression equations for each child performance variable and the set of family risk variables.

Step three in the test of Hypothesis 2 was to evaluate the equality of the resulting regression equations for Cohort 2 and Cohort 4 for each performance variable (Rao, 1973). Inequality of regression coefficients was hypothesized to suggest the differential relationships between the set of risk variables and the performance of children at different stages of development.

Hypothesis 3. This hypothesis specifically examined the extent to which the variables used to assign family risk status were associated with children's discrepancies in academic achievement, "discrepancy" defined as the difference between attained grade level to expected level for chronological age. Discrepancy scores for reading and mathematics achievement were derived for school-age children in order to test the following statistical subhypothesis:

For each Cohort 2, Cohort 3, and Cohort 4:

H_0: $\beta_1 = 0$ (no linear relationship)

H_1: $\beta_1 = 0$

where β = vector of regression coefficients

1 = children's reading discrepancy variable

$\alpha = .05$

H_0: $\beta_2 = 0$ (no linear relationship)

H_2: $\beta_2 = 0$

where β = vector of regression coefficients

2 = children's mathematics discrepancy variable

$\alpha = .05$

The test of Hypothesis 3 was accomplished by including children's reading and mathematics achievement discrepancy scores among the child performance (dependent) variables applied to the multivariate linear regression model used to test Hypothesis 2. Separate multivariate regression analyses were conducted for Cohort 2, Cohort 3, and Cohort 4. Again, measures of family (independent) variables were included in only those cohort analyses to which the family contributed an offspring.

Chapter IV

RESULTS

The purpose of this chapter is to present the results of the tests of Hypotheses 1, Hypothesis 2, and Hypothesis 3. For each hypothesis, the statistical procedures employed and the results of the analyses will be presented.

Hypothesis 1

> Family risk status significantly differentiates the performance of children of different ages on measures of cognitive functioning, academic achievement, and affective development.

A two-step procedure was used to test Hypothesis 1. In step one, two groups of families, high-risk and low-risk, were formed through a discriminant function analysis.[1] In step two, a multivariate analysis of variance was used to test the effect of family risk group membership and child's age on measures of child performance. The preschool cohort was analyzed separately, using Hotelling's two-sample T^2 test, due to a number of nonequivalent performance measures for younger children. A detailed discussion of each of these analyses is presented below.

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[1] In the present study, "risk" refers to family environmental process and status/situational variables that suggest an increased likelihood of learning and/or behavior problems in children living within the family environment.

Discriminant Function Analysis

The objective of discriminant function analysis is to find functions (composites) of predictor variables such that the composites show maximum differences between group means of composite scores and minimum overlap in the distribution of these scores (Tatsuoka, 1971; Thorndike, 1978). Discriminant analysis is a special case of canonical correlation analysis in which the variables in one set are dichotomous "dummy" variables generated to identify group membership. The discriminant analysis defines linear composites of predictor variables that maximize canonical correlations with composites of the dummy group membership variables. The computational problem for discriminant analysis is to determine the set of weights that will define the composites, subject to the restriction of minimum overlap between the groups in terms of their composite scores. In the two-group discriminant analysis conducted in the present study the "dummy" criterion variable was a variable indicating each family's membership in one or the other of the two groups, high-risk or low-risk.

The family variables used in the discriminant analysis, along with their descriptive statistics, are presented in Table 6. Correlations among family variables are given in Tables 7 and 8. These 22 family process and 12 status/situational variables were selected for study based on the hypothesis that they reflected the quality of the family environment as it related to children's intellectual, academic, and affective development. In other words, scores on family variables that represented positive environmental

Table 6

Means and Standard Deviations for 22 Family Process and 12 Status/Situational Variables (N=76)

	Variable Name	Mean	SD
1.	Quality of the home learning processes	107.45	10.41
2.	Verbal skills of primary caregiver	95.66	16.33
3.	Reading skills of primary caregiver	61.42	4.74
4.	Cognitive problem-solving skills of primary caregiver: Error score	4.80	3.49
5.	Cognitive problem-solving skills of primary caregiver: Latency score	13.42	7.88
6.	Attitudes toward child rearing and education	36.51	10.72
7.	Achievement orientation	49.21	10.37
8.	Intellectual-cultural orientation	46.46	9.02
9.	Verbal problem-solving skills or primary caregiver: Discipline	2.87	1.52
10.	Harmony and quality of parenting	26.11	3.56
11.	Locus of control of primary caregiver	11.09	4.92
12.	Anxiety of primary caregiver	2.43	2.41
13.	Depression of primary caregiver	3.71	3.59
14.	Quality of informal social network	14.49	1.54
15.	Cohesion	57.96	7.90
16.	Expressiveness	55.76	11.22
17.	Conflict	47.63	11.33
18.	Independence	46.96	10.69
19.	Active-recreational orientation	47.01	10.40
20.	Moral-religious emphasis	57.78	7.42

21.	Organization	52.67	8.84
22.	Control	52.22	10.35
A.	Occupational status	32.10	19.24
B.	Family income	7.66	2.30
C.	Educational attainment of mother	12.47	1.21
D.	Educational attainment of father	12.67	1.50
E.	Marital stability of primary caregiver	3.66	1.35
F.	Family health status	56.25	6.20
G.	Availability of educational re[illegible] in the home	6.36	1.5[illegible]
H.	Housing density	.86	.27
I.	Quality of the physical home environment	10.66	2.10
J.	Quality and safety of the residential environment	13.95	2.00
K.	Quality of the residential area	9.32	.90
L.	Residential stability	.62	1.18

Table 7

Correlations Among 22 Family Process Variables and Correlations of Family Process Variables with 12 Status/Situational Variables (N=76)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
2	.133																					
3	.259*	.526**																				
4	-.181	-.425**	-.519**																			
5	-.094	.198	.053	-.416**																		
6	.277**	.375**	.339**	-.279**	.073																	
7	-.164	-.119	-.084	.261*	-.151	-.309**																
8	.340**	.223*	.021	-.201*	-.087	.326**	.150															
9	-.056	.034	-.042	-.053	.037	-.007	.054	-.060														
10	.188	.393**	.465**	-.332**	.134	.384**	-.113	.158	-.159													
11	-.230*	-.242*	-.297**	.179	-.020	-.286**	.056	-.005	-.156	-.219*												
12	-.292**	.139	-.184	.059	-.040	-.147	.095	.034	-.170	-.320**	.462**											
13	-.311**	-.181	-.373**	.118	-.062	-.111	.054	.058	-.181	-.304**	.436**	.766**										
14	.300*	.346**	.550**	-.409**	.047	.251*	-.242**	.222*	.084	.130	-.180	-.238*	-.395**									
15	.266*	-.060	.087	-.128	-.042	.095	-.125	.066	.103	.134	-.509**	-.446**	-.495**	.257*								
16	.167	.045	.178	-.160	.081	.084	.027	.160	-.083	.068	-.194	-.048	-.363**	.232*	.147							
17	.185	.096	.105	-.004	-.012	.016	-.145	-.032	-.039	-.266**	.264*	.251*	.224*	.030	-.373**	-.176						
18	-.046	.149	-.116	-.147	.041	.114	-.075	.281**	-.069	.125	.094	.101	.153	-.026	-.025	-.032	-.048					
19	.226*	.108	.183	-.17	.016	.181	-.006	.107	.182	.037	-.323**	-.300**	-.426**	.242*	.229*	.208*	.005	.046				
20	.198	.076	.085	-.075	-.019	.002	-.165	.249*	.029	.149	-.326**	-.218*	-.177	.195	.451**	.088	-.210*	-.016	.155			
21	.094	-.210*	-.063	.055	-.041	-.111	.221*	.071	.023	.127	-.125	-.018	-.069	.077	.299**	.128	-.378**	-.026	.001	.200*		
22	-.095	-.229*	-.227*	.418**	-.300**	-.373**	.375**	-.223*	-.020	-.356**	.087	.201*	.116	-.211*	.071	.048	-.016	-.229*	-.170	.147	.306**	
A	.235*	.441**	.305**	-.188	.089	.117	-.122	.081	.064	.335**	-.334**	-.218*	-.215*	.288**	.145	-.072	.004	.016	.113	.161	.114	-.072
B	.165	.309**	.364**	-.285**	.058	.250*	-.059	.138	.077	.458**	-.409**	-.377**	-.316**	.276**	.382**	.063	-.161	-.092	.220*	.100	.070	-.253
C	.116	.516**	.459**	-.387**	.213*	.403**	-.054	.121	.130	.306**	-.223*	-.083	-.046	.324**	-.047	-.008	.008	.004	.054	.083	.116	-.147
D	.042	.400**	.395**	-.190	.034	.313**	-.256*	.008	.166	.366**	-.318**	-.092	-.157	.362**	.095	.052	-.058	.063	.084	.179	.099	-.093
E	.120	.275**	.386**	-.103	[illegible]	.053	.052	.033	-.022	.182	-.238*	-.085	-.142	.086	.176	.058	-.090	-.173	.082	.066	.136	-.022
F	-.212*	-.087	-.115	.136	-.057	-.315**	.151	-.249*	.109	.133	-.068	-.197	-.141	-.261*	-.036	-.088	-.233*	.001	-.069	-.073	.072	.154
G	.005	.001	.216*	.229*	.017	-.067	.014	-.025	-.199	.144	.054	-.026	-.116	-.047	-.034	.276**	.082	.176	-.114	.133	.033	.105
H	.219*	-.147	-.215*	.011	-.082	-.026	.026	-.013	-.111	-.166	.152	.136	.101	-.228*	-.045	-.204*	.159	-.102	-.029	.054	-.020	.245
I	.019	.389**	.386**	-.208*	.098	.137	-.059	-.034	.123	.519**	-.219*	-.316**	-.316**	.201*	.110	.152	-.120	-.126	.117	.118	-.071	-.234
J	-.027	.265**	.350**	-.134	-.017	.117	.098	-.057	.108	.450**	-.437**	-.317**	-.430**	.233*	.150	.257*	-.136	-.049	.184	-.008	.077	-.228
K	-.069	.227*	.265**	.069	-.040	.021	.235*	-.046	-.035	.466**	-.336**	-.216*	-.239*	.038	.014	.028	-.249*	-.069	.112	-.017	[illegible]	-.024
L	-.154	-.164	-.374**	.013	.074	.079	-.087	.164	-.036	-.148	.368**	.249*	.311**	.048	-.096	-.127	.020	.286**	.034	.014	.057	-.033

*p < .05
**p < .01

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Table 8

Correlations Among 12 Status/Situational Variables (N=76)

	A	B	C	D	E	F	G	H	I	J	K
B	.500**										
C	.306**	.225*									
D	.437**	.221*	.495**								
E	.266**	.457**	.056	.101							
F	.093	-.022	-.014	.145	-.087						
G	-.027	-.088	.048	.074	.100	-.022					
H	-.050	-.298**	-.150	-.336**	-.252*	-.092	-.080				
I	.321**	.499**	.190	.312**	.146	.229*	.094	-.332**			
J	.306**	.458**	.204*	.275**	.160	.307**	-.030	-.330**	.582**		
K	.403**	.453**	.210*	.162	.378**	.289**	.073	-.276**	.317**	.536**	
L	-.076	-.223*	-.011	.153	-.487**	-.164	-.286**	-.045	-.134	-.213*	-.309**

*$p < .05$
**$p < .01$

influences, e.g., high vocabulary and reading scores of the primary caregiver, suggested a "low-risk" environment. Conversely, scores on family variables that represented environmental influences of lesser positive value or potentially negative influences, e.g., low reading score and high depression score, suggested a "high-risk" environment. This concept of family risk environments was the basis for initial assignment of risk status (high versus low) to each family: (a) for each family, scores for all process and status/situational variables were summed to yield a total family score; (b) each total family score was included in determining a total family mean score; (c) this mean score became the cutoff for initial high-risk and low-risk group assignment.[2]

High and low-risk group assignment based on the total family mean score was the first step in an iterative procedure to obtain the discriminant function which maximized the difference between the two family groups.[3] A discriminant analysis was performed between the two groups, and the variables used in computing the linear classification function were chosen in a stepwise manner; at each step the variable that added the most to separation of the groups was entered into (or the variable that added the least was removed from)

[2] Missing data for research variables were "plugged" with the mean of the values present for that variable, a procedure recommended by Cohen and Cohen (1975) as superior to dropping subjects, dropping variables, or working from a missing-data correlation matrix.

[3] An "iterative procedure" refers to starting with an initial trial value, performing a certain operation on it to obtain a second trial value, and so on until a specified degree of accuracy is reached (Tatsuoka, 1971). In the present study, 100% accuracy of classification to high- and low-risk groups was sought.

the discriminant function (Jennrich & Sampson, 1981).[4] The first stepwise discriminant analysis resulted in a classification function that correctly classified 97.4% of the high-risk families and 94.7% of the low-risk families. The three families that were misclassified were reassigned and a second discriminant analysis was performed.

The next stepwise discriminant function applied to the family data resulted in a weighted linear composite of predictor variables that more accurately separated the families into high- and low-risk groups. Figure 4 presents the classification matrix which shows that approximately 97% of the families were correctly classified as high-risk (one misclassification) and 100% were correctly classified as low-risk, with a total of 99% correctly classified. Further iterations of the family data resulted in the same 1% error rate, i.e., one misclassified family. Consequently, the iteration was terminated after the second discriminant analysis since it resulted in the limits of accuracy to be expected. The means and standard deviations for the 34 family variables for the high- and low-risk groups are presented in Table 9.

The stepwise discriminant analysis yielded the results shown in Table 10. At each step of the analysis, the variable entered significantly contributed to the discrimination between the two groups as indicated by Rao's (1973) approximation to the F statistic ($p < .01$).[5] The final eight-variable composite was highly

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[4] In the present study, no variables were removed in constructing the most accurate discriminant function.

[5] This is a transformation of Wilks' lambda (γ_i) that can be compared to the F distribution (Jennrich & Sampson, 1981).

GROUP	PERCENT CORRECT	NUMBER OF CASES CLASSIFIED INTO GROUP: HIGH RISK	NUMBER OF CASES CLASSIFIED INTO GROUP: LOW RISK
HIGH RISK	97.4	38	1
LOW RISK	100.0	0	37
TOTAL	98.7	38	38

Figure 4. Classification Matrix for Stepwise Discriminant Function Analysis of 34 Family Variables from Table 6 (N=76)

Table 9

Means and Standard Deviations for 22 Family Process and 12 Status/Situational Variables from Table 6 for High and Low Risk Groups

Variable	High Risk (n=39)[a]		Low Risk (n=37)	
	Mean	SD	Mean	SD
1	106.13	11.31	108.84	9.37
2[b]	85.26	15.91	106.62	16.76
3	59.64	6.33	63.30	1.98
4	5.23	3.73	4.35	3.22
5	12.92	6.82	13.95	8.87
6	34.00	12.00	39.16	9.18
7[b]	47.54	10.64	50.97	10.08
8	43.38	9.28	49.70	8.75
9	2.82	1.57	2.92	1.46
10	24.54	3.82	27.76	3.27
11	12.51	5.76	9.59	3.83
12	3.05	2.84	1.78	1.86
13	5.00	4.72	2.35	1.70
14	14.01	1.79	15.01	1.24
15	57.13	9.17	58.84	6.29
16	53.23	11.55	58.43	10.88
17	47.90	11.39	47.35	11.27
18[b]	44.21	12.62	49.86	8.19
19[b]	42.46	11.21	51.81	9.46
20	56.08	8.11	59.57	6.61
21[b]	51.33	9.33	54.08	8.30
22	53.38	9.17	51.00	11.47
A[b]	19.16	12.84	45.74	24.22
B	6.69	2.76	8.68	1.67
C	12.08	1.22	12.89	1.20
D	12.15	1.80	13.22	1.11

E	3.36	1.46	3.97	1.21
F	55.59	7.89	56.95	3.69
G[b]	6.05	1.45	6.68	1.65
H	.91	.27	.81	.28
I[b]	9.77	2.56	11.59	1.46
J	13.13	2.38	14.81	1.51
K	8.92	1.04	9.73	.73
L	.74	1.46	.49	.77

[a] The single misclassified family is included in its original (high) risk group.

[b] Variables that were entered into the stepwise discriminant function analysis.

Table 10

Summary Table for Stepwise Discriminant Function Analysis
Using 34 Family Process and
Status/Situational Variables from Table 6

Step Number	Variable Entered	F Value to Enter	Approximate F-Statistic
1	Occupational Status	36.26	36.26**
2	Active-Recreational Orientation	16.54	30.21**
3	Verbal Skills of Primary Caregiver	15.54	29.33**
4	Achievement Orientation	12.31	28.53**
5	Availability of Educational Resources	13.10	29.33**
6	Independence	16.90	32.81**
7	Quality of the Physical Home Environment	5.34	30.65**
8	Organization	4.47	28.75**

Approximate F = 28.751
**$p < .01$

significant ($p < .01$) in discriminating between the high and low family risk groups. The canonical correlation between the eight-variable composite and the risk group criterion variable was .88. Analogous to the square of the multiple correlation, the square of the canonical correlation is the proportion of variance in the criterion variable that is accounted for by the predictor composite. Thus, in the present sample, 77% of the variance in group membership (high-risk versus low-risk) was accounted for by the weighted linear composite.

If groups have been selected in such a way that there are meaningful a priori differences between them, then their relative positions in the discriminant composite may also aid in the interpretation (Thorndike, 1978). A histogram of composite scores (as a canonical variable) for all families shows that the high-risk group (H) was well differentiated from the low-risk group (L) (Figure 5).

Table 11 presents the means and standard deviations for the eight composite variables for the high- and low-risk groups. For each variable, higher scores reflected family conditions and processes hypothesized to be of greater positive value; lower scores reflected conditions and processes of lesser positive value or potentially negative influences. Specifically, lower occupational status, lesser quality of the physical home environment, and fewer educational resources in the home characterized conditions in high-risk families. Reduced emphasis on certain family processes also characterized high-risk families: the extent to which family members

```
                                       L  LL                 H     H  H
                     L     L   L  L  LLL LLL              HHHH  H HH  H H
       L   L  L  L L LL  L L  LLLLLLLLLLLLLLL   H    H H  HHHH  HHHHHHHH HH H HHHH HHHHH   H
.+....+....+....+....+....+....+2...+....+....+....+....+....+....+..1.+....+....+....+....+....+....+...
         -4.0      -3.0      -2.0      -1.0       0.0       1.0       2.0       3.0       4.0       5.0
    -4.5      -3.5      -2.5      -1.5       -.50       .50      1.5       2.5       3.5       4.5
```

Figure 5. Histogram of Composite Scores as a Canonical Variable for High-Risk (H) and Low-Risk (L) Families

Table 11

Means and Standard Deviations for 8 Family Process and Status/Situational Variables for High and Low Risk Groups

	High Risk (n=39)		Low Risk (n=37)	
	Mean	SD	Mean	SD
Occupational Status	19.16	12.84	45.74	24.22
Active-Recreational Orientation	42.46	11.21	51.81	9.46
Verbal Skills of Primary Caregiver	85.26	15.91	106.62	16.76
Achievement Orientation	47.54	10.64	50.96	10.08
Availability of Educational Resources	6.05	1.45	6.68	1.65
Independence	44.21	12.62	49.86	8.19
Quality of the Physical Home Environment	9.77	2.56	11.59	1.46
Organization	51.33	9.33	54.08	8.30

were encouraged to be self-sufficient; the extent to which the family participated in various recreational activities; the extent to which families cast activities in an achievement-oriented or competitive framework; and the importance placed on structuring family activities and the clarity of family rules and responsibilities. In addition, the quality of the language environment, represented by the verbal skills of the primary caregiver, appeared to be lower in high-risk as compared to low-risk families.

Closer examination revealed which of the eight composite variables contributed most to the discriminant function for each risk group. Table 12 presents the high- and low-risk group classification functions or combining weights for each of the composite variables.[6] However, because these weights were applied to the predictor variables in raw score scales, they were affected by the particular units used for each variable. The spurious effects of units on the magnitude of combining weights were eliminated by comparing the weights that would be applied to the predictor variables in standardized form, also given in Table 12. In this form, the relative contribution of the predictor variable to the discriminant function may be gauged by the magnitude of the variable's standardized weight in comparison to the standardized weights of other predictor variables of the composite (Tatsuoka, 1971; Timm, 1975).

[6] The classification functions or combining weights could be used to classify new families into either the high- and low-risk group; the family would be assigned to the group with the largest value of the classification function.

Table 12

Combining and Standardized Weights for Discriminant Function Variables by Risk Group

Variable	High Risk Combining Weight	High Risk Standardized Weight	Low Risk Combining Weight	Low Risk Standardized Weight
Occupational Status	.389	4.99	.525	12.72
Active-Recreational Orientation	1.305	14.63	1.566	14.81
Verbal Skills of Primary Caregiver	.786	12.51	.923	15.47
Achievement Orientation	1.152	12.26	1.357	13.68
Availability of Educational Resources	8.605	12.48	10.124	16.70
Independence	1.299	16.39	1.521	12.47
Quality of the Physical Home Environment	4.040	10.34	4.652	6.79
Organization	1.236	11.53	1.367	11.34
CONSTANT	-199.227		-272.697	

Review of the standardized discriminant weights revealed that the relative importance of each variable in the discriminant function was different for each group. For the low-risk group, Availability of Educational Resources contributed the largest weight, followed by Verbal Skills of the Primary Caregiver, Active-Recreational Orientation, and Achievement Orientation. Occupational Status, Independence, Organization, and Quality of the Physical Home Environment further contributed to the low-risk classification function, in descending order of importance. For the high-risk group, Independence contributed the largest weight, followed by Active-Recreational Orientation, Verbal Skills of the Primary Caregiver, and Availability of Educational Resources. Achievement Orientation, Organization, Quality of the Physical Home Environment, and Occupational Status further contributed to the high-risk classification function, in descending order of importance.

In summary, a stepwise discriminant function analysis of 34 family variables resulted in a significant and highly accurate separation of families into high and low-risk groups. The discriminant function was composed of eight predictor variables, each of which significantly contributed to the discrimination between groups. The final composite, represented as a canonical variable, accounted for 77% of the variance in group membership. Further examination of the classification functions for each risk group indicated differences in the relative importance of each composite variable in characterizing high-risk or low-risk status.

Multivariate Analysis of Variance

Step two in the test of Hypothesis 1 was to examine the independent and interactive effects of family risk status and age on the performance of school-age children across a number of performance measures. A two-way multivariate analysis of variance (MANOVA) with eight dependent variables was conducted, using high or low family risk group membership (status) and child's chronological age (cohort membership, omitting the preschool/kindergarten cohort) as the independent variables, and a subset of child performance measures as the dependent variables (see Figure 3). The subset of eight child performance variables selected from those measures listed in Table 7 included (a) intellectual functioning-verbal, (b) intellectual functioning-performance, (c) reading achievement grade discrepancy, (d) mathematics achievement grade discrepancy, (e) self-acceptance, (f) locus of control (g) cognitive problem-solving: error score, and (h) social competency. Intellectual functioning-full scale and receptive vocabulary measures were omitted due to their general redundancy, i.e., high correlations with the intellectual functioning-verbal and performance measures. Reading and mathematics achievement grade scores were also omitted due to obvious maturational influences and general redundancy with achievement discrepancy scores, the latter scores providing a more accurate assessment of children's achievement relative to normal expectancy for chronological age. The final subset of performance measures was representative of general domains of child functioning. The correlations between all performance variables for Cohorts 2, 3, and 4 are presented in Table 13.

The two grouping factors, family risk status, defined by the discriminant function analysis, and child's chronological age, defined by membership in the appropriate age cohort, resulted in the cell sizes shown in Figure 6. Descriptive statistics for each performance variable for high- and low-risk groups by cohort are shown in Table 14. A MANOVA was applied to these data to test the main effects of Factor 1: family risk status (high versus low) and Factor 2: chronological age, and their interaction. A Hotelling's T^2 was computed to test the main effect for Factor 1: family risk status, since this analysis required a multivariate test of the mean differences in only two levels of the factor when averaged over the three levels of Factor 2: chronological age (Davidson & Toporek, 1981). The hypothesis of no Factor 1 effects was rejected, with $F = 21.76 > F_{8,147}(.05) = 2.02$. These results suggested that family risk status, characterized by the eight-variable composite, affected the performance of school-age children across a subset of intellectual, academic, and affective measures. Results indicated that on each measure, children from high-risk families exhibited lower levels of performance as compared to children from low-risk families. To test the main effect for Factor 2: chronological age, Wilks lambda likelihood ratio statistic was computed. Using Rao's (1973) approximation, $F = 8.80 > F_{16,294}(.05) = 1.75$, and the hypothesis of no Factor 2 effects was rejected. These results suggested that children's performance across measures was also affected by their

Table 13

Correlations Between Child Performance Variables for Cohorts 2, 3, and 4

Cohort 2 (n=54)	VIQ	PIQ	FSIQ	PPVTR	SLFAC	MFFTE	RDGR	RDDIS	MAGR	MADIS	LOC
PIQ	.498										
FSIQ	.879	.849									
PPVTR	.615	.230	.501								
SLFAC	.248	.401	.371	-.025							
MFFTE	-.272	-.302	-.321	-.069	-.342						
RDGR	.161	.025	.117	.006	.195	-.322					
RDDIS	.618	.382	.592	.214	.200	-.116	.186				
MAGR	.482	.308	.446	.234	.291	-.537	.398	.537			
MADIS	.613	.514	.652	.280	.309	-.200	.170	.803	.727		
LOC	-.102	-.025	-.081	.117	-.229	.056	-.302	-.222	-.395	-.317	
SOCMP	.638	.548	.690	.344	.403	-.400	.185	.587	.485	.662	-.150

Cohort 3 (n=64)	VIQ	PIQ	FSIQ	PPVTR	SLFAC	MFFTE	RDGR	RDDIS	MAGR	MADIS	LOC
PIQ	.583										
FSIQ	.908	.864									
PPVTR	.663	.508	.651								
SLFAC	.299	.239	.306	.349							
MFFTE	-.523	-.640	-.644	-.337	-.102						
RDGR	.612	.365	.562	.447	.129	-.385					
RDDIS	.718	.395	.647	.543	.315	-.291	.773				
MAGR	.732	.474	.685	.572	.219	-.460	.635	.600			
MADIS	.814	.540	.766	.686	.329	-.430	.552	[illegible]	.854		
LOC	-.477	-.203	-.404	-.381	-.267	.119	-.352	-.415	-.539	-.492	
SOCMP	.406	.330	.411	.389	.423	-.345	.354	.427	.541	.525	-.327

Cohort 4 (n=42)	VIQ	PIQ	FSIQ	PPVTR	SLFAC	MFFTE	RDGR	RDDIS	MAGR	MADIS	LOC
PIQ	.663										
FSIQ	.934	.883									
PPVTR	.875	.562	.809								
SLFAC	-.047	-.058	-.062	.058							
MFFTE	-.363	-.274	-.345	-.337	-.102						
RDGR	.787	.574	.756	.826	.127	-.481					
RDDIS	.847	.534	.773	.837	.134	-.450	.914				
MAGR	.726	.640	.744	.543	-.060	-.408	.638	.607			
MADIS	.845	.653	.823	.699	-.081	-.346	.645	.775	.828		
LOC	-.438	-.226	-.371	-.474	-.250	.402	-.450	-.440	-.339	-.342	
SOCMP	.537	.383	.503	.482	.130	-.385	.519	.543	.442	.505	-.231

Note. The key to the performance variables is as follows:

VIQ = Intellectual functioning-verbal
PIQ = Intellectual functioning-performance
FSIQ = Intellectual functioning-full scale
PPVTR = Receptive vocabulary
SLFAC = Self acceptance
MFFTE = Cognitive problem solving: error score
RDGR = Reading achievement grade score
RDDIS = Reading achievement grade discrepancy score
MAGR = Mathematics achievement grade score
MADIS = Mathematics achievement grade discrepancy score
LOC = Locus of control
SOCMP = Social competency

	Cohort 2 6-7 to 10-0	Cohort 3 10-1 to 13-11	Cohort 4 14-0 to 19-11	TOTAL
High Risk	30	34	23	87
Low Risk	24	30	19	73
TOTAL	54	64	42	160

Note. Ages for each cohort are for years and months. Cohort 1 (not shown here) resulted in cell sizes of 12 (high risk) and 10 (low risk).

Figure 6. Cell Sizes Resulting from Family Risk Group and Cohort Membership Grouping Factors

Table 14

Descriptive Statistics for Child Performance Variables for Cohorts 2, 3, and 4 by Risk Group

Cohort 2		Mean	SD
High Risk (N=30)	VIQ	96.37	13.17
	PIQ	101.10	14.02
	SLFAC	50.03	11.30
	MFFTE	1.13	.51
	RDDIS	-.88	1.11
	MADIS	-.45	1.05
	LOC	19.73	3.89
	SOCMP	129.80	31.50
Low Risk (N=24)	VIQ	103.33	13.73
	PIQ	108.20	13.04
	SLFAC	54.29	5.72
	MFFTE	.91	.47
	RDDIS	.41	2.11
	MADIS	.16	1.22
	LOC	19.71	4.67
	SOCMP	159.60	34.04
Cohort 3		**Mean**	**SD**
High Risk (N=34)	VIQ	90.12	15.35
	PIQ	94.85	15.79
	SLFAC	49.94	9.29
	MFFTE	.86	.51
	RDDIS	-1.64	2.16
	MADIS	-1.15	1.70
	LOC	15.65	4.85
	SOCMP	134.70	32.30
Low Risk (N=30)	VIQ	101.70	15.91
	PIQ	103.90	12.07
	SLFAC	54.17	7.11
	MFFTE	.46	.32
	RDDIS	.01	3.18
	MADIS	.31	2.12
	LOC	14.40	6.34
	SOCMP	158.20	36.26
Cohort 4		**Mean**	**SD**
High Risk (N=23)	VIQ	91.43	18.71
	PIQ	94.04	18.17
	SLFAC	48.96	8.10
	MFFTE	.59	.47
	RDDIS	-2.63	3.87
	MADIS	-2.30	4.02
	LOC	13.91	4.94
	SOCMP	144.90	34.66
Low Risk (N=19)	VIQ	93.00	20.01
	PIQ	98.63	13.11
	SLFAC	49.47	8.21
	MFFTE	.60	3.00
	RDDIS	-1.75	3.78
	MADIS	-2.44	3.14
	LOC	13.79	6.12
	SOCMP	149.50	41.96

chronological age at the time of testing, although the direction of the effects for age were varied. Declines in performance were observed for children with increasing age on measures of intellectual functioning and academic achievement, while other measures revealed increases in competency with increasing age (e.g., cognitive problem-solving and locus of control). Still other measures showed little change with age (e.g., self-acceptance and social competency).

The test of the interaction of Factor 1: family risk status and Factor 2: chronological age resulted in $F = .70 < F_{16,294}(.05) = 1.75$, and the hypothesis of no interaction effects was not rejected. In other words, the conditions and processes of the family, characterized as either high-risk or low-risk, and the child's chronological age did not act upon one another to influence the child's measured performance. Therefore, it was concluded that both family risk and chronological age affected the performance of children across the eight measures, and they did so in an additive manner.

The nature of the effects of Factor 1: family risk status was examined in order to further explore the problem presented in the substantive hypothesis: What is the effect of family risk status on the performance of children of different ages on each measure? To answer this question, the Bonferroni method of multiple comparisons was employed because of its applicability for making comparisons involving the individual means in a two-way multivariate design (Johnson & Wichern, 1982; Timm, 1975). To adjust for the multiple comparison of all pairs of means, the Bonferroni test value is the simultaneous significant p value of comparisons of all pairs of means. When applied to the pairwise comparisons among group means in the family risk status X age design, to be significant at the .05 level the p value had to be less than .003 (Dixon, 1981).

Results of the Bonferroni t tests for pairwise comparisons among high-risk (HR) and low-risk (LR) group means within cohorts is presented in Table 15. Two pairwise comparisons were statistically significant. For the measure of social competency (SOCMP), the mean for Cohort 2 - HR was significantly below the mean for Cohort 2 - LR (Bonferroni p < .003). A significant mean difference was also obtained between Cohort 3 - HR and Cohort 3 - LR for the measure of cognitive problem-solving: error score (MFFTE) (Bonferroni p < .0006). The mean performance of Cohort 3 - HR children was significantly below (i.e., more errors) the mean performance of children in Cohort 3 - LR. Thus, these results indicated that high-risk children 6 to 10 years of age exhibited a lower level of social competency than their low-risk age peers. High risk children 10 to 13 years of age were less adept at solving cognitive problem-solving tasks than their low-risk age peers.

Table 16 presents the pairwise comparisons among high-risk (HR) and low-risk (LR) group means across cohorts, again using the Bonferroni test. The mean performance of children in Cohort 2 - HR reflected significantly fewer cognitive problem-solving skills (MFFTE), a lower level of social competence (SOCMP), and a more external locus of control (LOC) than children in Cohort 3 - LR (Bonferroni p < .003). Performance means for Cohort 2 - HR were also

Table 15

Pairwise Comparisons Among High Risk (HR) and Low Risk (LR) Group Means Within Cohorts: Bonferroni Test

Variable	Pairwise Comparisons : t-values[a] Cohort 2-HR Cohort 2-LR	 Cohort 3-HR Cohort 3-LR	 Cohort 4-HR Cohort 4-LR
VIQ	-1.59	-2.89	-.32
PIQ	-1.81	-2.50	-.80
SLFAC	-1.81	-1.96	-.19
MFFTE	1.75	3.52**	-.09
RDDIS	-1.71	-2.40	-1.03
MADIS	-.96	-2.52	.18
LOC	.02	.97	.08
SOCMP	-3.14*	-2.70	-.43

[a] Pooled variance t-values

*Bonferroni $p < .00333$
**Bonferroni $p < .00067$

Table 16

Pairwise Comparisons Among High Risk (HR) and Low Risk (LR) Group Means Across Cohorts: Bonferroni Test

	Pairwise Comparisons : t-values[a]					
Variable	Cohort 2-HR Cohort 3-LR	Cohort 2-HR Cohort 4-LR	Cohort 3-HR Cohort 2-LR	Cohort 3-HR Cohort 4-LR	Cohort 4-HR Cohort 2-LR	Cohort 4-HR Cohort 3-LR
VIQ	-1.29	.72	3.10*	-.63	2.55	2.32
PIQ	-.77	.57	3.46*	-.91	3.12*	2.21
SLFAC	-1.86	.22	1.89	.19	2.12	2.18
MFFTE	5.76***	4.03**	.48	2.00	2.50	-1.00
RDDIS	-1.25	1.07	2.80	.13	3.78**	3.45*
MADIS	-1.27	2.93	2.12	1.94	3.65**	4.08**
LOC	4.01**	3.93**	2.96	1.26	3.85**	.34
SOCMP	-3.17*	-1.93	2.69	-1.49	1.45	1.38

[a] Pooled variance t-values

*Bonferroni $p < .00333$
**Bonferroni $p < .00067$
***Bonferroni $p < .00006$

significantly below Cohort 4 - LR means for cognitive problem-solving skills (MFFTE) and locus of control (LOC) (Bonferroni p < .0006). However, the mean performance of Cohort 2 - LR children was significantly better when compared to the mean performance of Cohort 3 - HR children on measures of intellectual functioning-verbal (VIQ) and intellectual functioning-performance (PIQ) (Bonferroni p < .003). Similarly, Cohort 2 - LR children significantly outperformed Cohort 4 - HR children on measures of intellectual functioning-performance (PIQ), reading achievement grade discrepancy (RDDIS), mathematics achievement grade discrepancy (MADIS), and locus of control (LOC) (Bonferroni p < .003). Table 16 also shows that the mean performance of Cohort 4 - HR children was significantly below the performance of Cohort 3 - LR children on the two academic achievement grade discrepancy scores (RDDIS, MADIS) (Bonferroni p < .003). The mean performance of Cohort 3 - HR and Cohort 4 - LR children was similar and revealed no significant differences. Taken together, results of the pairwise comparisons across cohorts indicated higher levels of intellectual and affective functioning for older, low-risk children as compared to younger, high-risk children. These differences were consistent with the MANOVA findings supporting the main effects for risk status and age. More important in the study of comparisons was the general finding that older, high risk children performed significantly below younger, low-risk children on measures of intellectual functioning, academic achievement, and locus of control.

To summarize, results of the two-way MANOVA indicated that both family risk level and chronological age affected the performance of children across a variety of intellectual, academic, and affective measures. High risk children exhibited significantly lower levels of performance than low-risk children across measures. No interaction effects were evident. The nature of the effects of family risk status at different ages on each measure was investigated by performing multiple pairwise comparisons within and across cohorts. Results revealed significant differences both within and across cohorts, suggesting that on some performance measures, high-risk children were less competent than their low-risk age peers. The results also suggested that younger children from low-risk families outperformed older children from high risk families on measures of intellectual, academic, and affective functioning.

Hotelling's T^2

The preschool/kindergarten cohort (Cohort 1) was analyzed separately due to nonequivalent performance measures for younger children. Hotelling's T^2 statistic was used in the two-sample multivariate test of the difference between the means of the high and low risk groups. A subset of five child performance variables was selected from those measures listed in Table 5 and included (a) intellectual functioning-verbal, (b) intellectual functioning-performance, (c) receptive vocabulary, (d) cognitive problem-solving: error score, and (e) academic readiness. Intellectual functioning-full scale was omitted due to its redundancy with intellectual functioning-verbal and intellectual functioning-performance measures. Social competency was also omitted from the analysis due to a high proportion of missing observations (27%), along with the measure of self-acceptance due to problems in completion by the younger children. With the exception of social competency, the remaining five-variable subset was representative of general domains of preschool/kindergarten child functioning. The correlations between all performance variables for Cohort 1 are presented in Table 17.

Descriptive statistics for all eight performance variables for the high- and low-risk groups are presented in Table 18. Hotelling's two-sample T^2 test was conducted using the five-variable subset. With $F = 2.54 < F_{5,16}(.05) = 2.85$, the hypothesis of equal means was not rejected, suggesting that family risk status did not affect the performance of the younger children across the subset of intellectual and preacademic performance measures.

The Bonferroni method of multiple comparisons was used to examine the individual means (Timm, 1975). After adjustment for the multiple comparison of all pairs of means, the simultaneous significant p value at the .05 level remained .05. Two pairwise comparisons were statistically significant. For the measure of intellectual functioning-performance (PIQ), the mean for the high-risk group was significantly below the mean for the low-risk group (Bonferroni $p < .01$). A significant mean difference was also obtained for the measure of cognitive problem-solving: error score (KRISPE). The mean performance of the high-risk group was

Table 17

Correlations Between Performance Variables for Cohort 1 (N=22)

Variable	VIQ	PIQ	FSIQ	PPVTR	SLFAC	KRISPE	PSI
PIQ	.719						
FSIQ	.941	.910					
PPVTR	.528	.435	.524				
SLFAC	.226	.230	.249	.375			
KRISPE	-.131	-.319	-.235	-.250	.124		
PSI	.593	.496	.595	.442	.263	-.198	
SOCMP[a]	.547	.339	.496	.315	.388	-.227	.841

Note. Key to performance measures is as follows:

VIQ = Intellectual Functioning - Verbal
PIQ = Intellectual Functioning - Performance
FSIQ = Intellectual Functioning - Full Scale
PPVTR = Receptive Vocabulary
SLFAC = Self Acceptance
KRISPE = Cognitive Problem-Solving: Error Score
PSI = Academic Readiness
SOCMP = Social Competency

[a] Six children were assigned the mean value of 63 for social competency due to missing data.

Table 18

Descriptive Statistics for Cohort 1 by Risk Group

	Group			
	High Risk (n=12)		Low Risk (n=10)	
Variable	Mean	SD	Mean	SD
VIQ[a]	91.42	15.35	104.50	17.10
PIQ[a]	93.08	14.76	111.00	12.33
FSIQ	91.75	14.77	108.30	15.29
PPVTR[a]	83.83	17.11	95.40	30.09
SLFAC	50.75	4.96	50.90	6.01
KRISPE[a]	1.82	.75	1.09	.54
PSI[a]	77.50	22.22	90.90	8.84
SOCMP[b]	58.08	29.45	69.40	17.49

[a] Variables included in the Hotelling's T^2 test.

[b] Three children in each group were assigned the mean value of 63 for social competency due to missing data.

significantly below (i.e., more errors) the mean performance of the low-risk group (Bonferroni $p < .05$).

In summary, results of the Hotelling's T^2 test for Cohort 1 high- and low-risk multivariate comparison of means did not lead to rejection of the hypothesis of equal means. However, multiple pairwise comparisons of individual means revealed significant differences between risk groups on measures of intellectual functioning-performance and cognitive problem-solving skills: error score. The high-risk group performed significantly below the low-risk group on these measures, suggesting perhaps that for this set of data, the significant comparisons did not involve some linear combination of the elements of the vector μ(Timm, 1975).

Summary

A series of multivariate analyses was performed to test the hypothesis that family risk status, qualitatively assigned on the basis of a measured, quantitative dimension, differentiated the performance of children of different ages on measures of cognitive functioning, academic achievement, and affective development. In the first of these analyses, separation of families into high- and low-risk groups was accomplished through use of a stepwise discriminant function analysis and resulted in an eight-variable composite which maximally discriminated between the groups. This composite was made up of both family process and status/situational variables and accounted for 77% of the variance in high- or low-risk group membership.

In the second analysis, a two-way MANOVA was employed to test the effects of family risk status (high versus low) and chronological age on the performance of children across a subset of measures. Results of the MANOVA indicated significant main effects for family risk status and age, with no interaction effects. Results indicated that children from high-risk families performed significantly below children from low-risk families across measures. The nature of the effects of family risk status was explored through the Bonferroni method of multiple pairwise comparisons. Results indicated that high-risk children performed significantly below their low risk age peers and younger, low-risk children on a number of performance measures.

The last of the analyses of Hypothesis 1 examined the effects of family risk status on the performance of preschool/kindergarten children. Although the multivariate test of the means of the two groups was not significant, multiple pairwise comparisons of the individual means revealed two significant performance differences. High risk children exhibited lower levels of performance than low-risk children on measures of cognitive problem-solving and intellectual functioning-performance.

Hypothesis 2

> Features of the physical, social, and psychological family environment that contribute to the general risk status are differentially related to decrements in child performance measures of cognitive functioning, academic achievement, and affective development with increasing age.

A three-step procedure was used to test Hypothesis 2. In step one, Hotelling's T^2 statistic was used to test the significance of children's performance differences on measures that revealed lower mean performance from ages 6 years, 7 months (Cohort 2) to ages 10 years, 0 months (Cohort 4).[7] In step two, child performance measures showing significant declines and the eight family variables that differentiated high and low-risk groups were applied to a multivariate linear regression model. In step three, the multivariate regression equations resulting from separate analyses of Cohort 2 and Cohort 4 were examined for differences. A detailed discussion of each of these analyses is presented below.

Hotelling's T^2

The performance variables showing lower mean values from ages 6-10 years (Cohort 2) to ages 14-19 years (Cohort 4) are presented in Table 19. Hotelling's two-sample T^2 test was conducted and the difference between the younger (Cohort 2) and older (Cohort 4) children's group means using all seven variables was highly significant ($p < .01$; $F = 22.81 > F_{7,88}(.01) = 2.95$). Analysis of the differences on single performance variables revealed five variables that were significantly different ($p < .05$): (a) intellectual functioning-verbal, (b) intellectual functioning-performance, (c) intellectual functioning-full scale, (d) reading achievement grade discrepancy, and (e) mathematics achievement grade

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[7] In this and subsequent analyses, children and families were included for analysis based on cohort membership, regardless of risk status used in the tests of Hypothesis 1.

Table 19

Descriptive Statistics and Tests of Significance for Child Performance Variables Revealing Performance Declines from Ages 6-10 Years (Cohort 2) to 14-19 Years (Cohort 4): Hotelling's T^2 Test

Variable	Cohort 2 (N=54)		Cohort 4 (N=42)		t-value[a]
	Mean	SD	Mean	SD	
VIQ	99.46	13.74	92.14	19.08	2.18*
PIQ	104.26	13.94	96.67	16.00	2.48*
FSIQ	101.76	13.23	93.86	17.55	2.52*
PPVTR	100.39	16.62	95.95	20.74	1.16
SLFAC	51.93	9.42	49.19	8.05	1.50
RDDIS[b]	-.31	1.74	-2.23	3.81	3.30**
MADIS[b]	-.18	1.16	-2.36	3.61	4.19**

[a] Pooled variance t values.

[b] Reading and mathematics discrepancy scores reflect increased performance deficits, i.e., the larger the score the greater the decline in performance.

*$p < .05$
**$p < .01$

discrepancy. In other words, on measures of intellectual functioning and academic achievement grade discrepancy, older children performed significantly below younger children in the present sample of families. Measures of receptive vocabulary and self-acceptance, although showing declines, were not statistically significant.

Multivariate Regression Analysis

The variables of significance identified through Hotelling's T^2 test formed the subset of dependent variables used in testing the multivariate linear regression model with one exception. Intellectual functioning-full scale was omitted from the analysis due to its high redundancy with verbal and performance measures (VIQ and PIQ correlations with FSIQ = .93 and .88, respectively). The independent variables were those family risk variables identified through the discriminant function analysis in the test of Hypothesis 1 as significantly contributing to the linear composite that discriminated the two family risk groups. These eight variables included: (a) Occupational Status (OCPST), (b) Active-Recreational Orientation (ACTRCO), (c) Verbal Skills of Primary Caregiver (VRBSK), (d) Achievement Orientation (ACHVO), (e) Availability of Educational Resources (AEDR), (f) Independence (INDP), (g) Quality of the Physical Home Environment (QPHE), and (h) Organization (ORGNZ). A multivariate regression analysis was conducted separately for Cohort 2 and Cohort 4 using the set of eight family risk variables and the subset of four child performance variables.

Cohort 2. Correlations among the family risk variables, and the correlations of the risk variables with child performance variables are given in Table 20. The low correlations among the set of independent variables (= .394) minimized the problems created by multicollinearity that make it difficult to detect the significant regression coefficients (Johnson & Wichern, 1982). Table 21 presents the squared multiple correlation of each child performance variable with the family risk variables and the tests of significance for the resulting multiple regression equations. The joint test of no linear relationship between the set of family risk variables and each child performance variable was rejected for two performance variables ($F_{(8,45)}^{(.05)} = 2.18$). The set of risk variables significantly predicted children's reading achievement grade discrepancy score ($p < .01$; $F = 3.37$) and mathematics achievement grade discrepancy score ($p < .05$; $F = 2.26$). Family risk variables accounted for 38% and 29% of the variance in reading and mathematics achievement grade discrepancy scores, respectively.

The contribution of each family risk variable to the variance in reading and mathematics achievement grade discrepancy scores was examined by using Cohen and Cohen's (1975) generalization of Fischer's protected t test. According to this procedure, if the F for a given set is significant, the individual independent variables which make up the set are each tested for significance at by means of a standard t test. The partial contribution of each independent variable is t-tested by examining the significance of the regression coefficients. With this procedure, the t tests are protected from

Table 20

Correlations Among the 8 Family Risk Variables and Correlations of the Risk Variables with 4 Child Performance Variables for Cohort 2 (N=54)

	OCPST	ACTRCO	VRBSK	ACHVO	AEDR	INDP	QPHE	ORGNZ
ACTRCO	.079							
VRBSK	.394	−.147						
ACHVO	.038	.084	−.023					
AEDR	.135	−.233	.222	−.181				
INDP	.063	.274	.121	−.246	−.068			
QPHE	.287	.051	.104	−.048	.157	−.140		
ORGNZ	.056	.198	−.302	.197	−.006	−.096	.020	
VIQ	.153	−.101	−.420	.061	.305	.106	.115	−.008
PIQ	.231	−.081	.069	−.020	.253	.073	.304	−.015
RDDIS	.220	−.077	.349	−.112	.515	.140	.210	−.168
MADIS	.193	−.112	.236	.072	.371	.177	.162	−.153

Note. Key to the variables is as follows:

OCPST = Occupational Status
ACTRCO = Active-Recreational Orientation
VRBSK = Verbal Skills of Primary Caregiver
ACHVO = Achievement Orientation
AEDR = Availability of Educational Resources
INDP = Independence
QPHE = Quality of the Physical Environment
ORGNZ = Organization
VIQ = Intellectual Functioning - Verbal
PIQ = Intellectual Functioning - Performance
RDDIS = Reading Achievement Grade Discrepancy Score
MADIS = Mathematics Achievement Grade Discrepancy Score

Table 21

Squared Multiple Correlation of Each Child Performance Variable with 8 Family Risk Variables and Tests of Significance for Cohort 2 (N=54)

Variable	Squared Multiple Correlation	F Statistic
VIQ	.268	2.06
PIQ	.189	1.31
RDDIS	.375	3.37**
MADIS	.287	2.26*

*$p < .05$
**$p < .01$

large experimentwise Type I error by the requirement that the preliminary F test must meet the α criterion (Cohen & Cohen, 1975).

Table 22 gives the raw and standardized regression coefficients for predicting for Cohort 2 the two child performance variables meeting the α(.05) criterion. For each dependent variable, the t statistic for the regression coefficient represents the significance of that independent variable given the other independent variables. The family risk variable, Availability of Educational Resources in the Home, significantly contributed to RDDIS and MADIS ($p < .01$). The risk variable, Independence, also significantly contributed to the predictability of MADIS ($p < .05$).

Cohort 4. Table 23 presents the correlations among family risk variables, and the correlations of the risk variables with child performance variables for Cohort 4. Among the set of independent variables, the correlations were generally low (= .416), with the exception of Occupational Status and Verbal Skills of the Primary Caregiver where the correlation was .528. It is noteworthy that the relationship between OCPST and VRBSK was also evident in Cohort 2, where .394 was the highest correlation among the set of independent variables.

Multivariate regression analysis of the family risk and child performance variables for Cohort 4 yielded the results given in Table 24. The joint test of no linear relationship between the set of family risk variables and each child performance variable was rejected for all four performance variables ($F_{(7,34)}(.05) = 2.33$). The set of risk variables significantly predicted children's

Table 22

Raw and Standardized Regression Coefficients for Predicting 2 Child Performance Variables from Family Risk Variables and Tests of Significance for Cohort 2 (N=54)

Risk Variable	RDDIS			MADIS		
	Raw	Standard	t-value	Raw	Standard	t-value
CGPST	.004	.048	.35	.004	.087	.60
ACTRCO	.003	.022	.17	-.010	-.108	-.76
VRBSK	.017	.159	1.12	.001	.001	.07
ACHVO	.008	.043	.34	.030	.255	1.86
AEDR	.558	.475	3.71**	.285	.375	2.74**
INDP	.025	.162	1.21	.030	.292	2.05*
QPHE	.104	.131	1.03	.071	.139	1.02
ORGNZ	-.024	-.120	-.91	-.020	-.155	-1.11
Intercept	-7.029	-3.937	-2.45*	-4.193	-3.618	-2.11*

Note. The standardized regression coefficients are the raw coefficients divided by the standard deviations of the dependent variables and multiplied by the standard deviations of the independent variables.

$^{*}p < .05$
$^{**}p < .01$

Table 23

Correlations Among the 8 Family Risk Variables and Correlations of the Risk Variables with 4 Child Performance Variables for Cohort 4 (N=42)

	OCPST	ACTRCO	VRBSK	ACHVO	AEDR	INDP	QPHE	ORGNZ
ACTRCO	.027							
VRBSK	.528	−.022						
ACHVO	−.388	.286	−.345					
AEDR	−.312	.025	−.193	.404				
INDP	.156	−.221	.227	−.268	−.171			
QPHE	.243	.218	.416	−.086	.051	−.276		
ORGNZ	.049	−.021	−.318	.171	.048	−.112	−.072	
VIQ	.463	−.388	.562	−.633	−.147	.043	.277	−.140
PIQ	.394	−.274	.454	−.369	.039	.047	.111	−.302
RDDIS	.466	−.258	.570	−.464	−.227	.047	.356	−.253
MADIS	.416	−.356	.614	−.659	−.181	.056	.220	−.283

ote. Key to the variables is as follows:

OCPST = Occupational Status
ACTRCO = Active-Recreational Orientation
VRBSK = Verbal Skills of Primary Caregiver
ACHVO = Achievement Orientation
AEDR = Availability of Educational Resources
INDP = Independence

QPHE = Quality of the Physical Environment
ORGNZ = Organization
VIQ = Intellectual Functioning - Verbal
PIQ = Intellectual Functioning - Performance
RDDIS = Reading Achievement Grade Discrepancy Score
MADIS = Mathematics Achievement Grade Discrepancy Score

Table 24

Squared Multiple Correlation of Each
Child Performance Variable with 8 Family Risk Variables
and Tests of Significance for Cohort 4 (N=42)

Variable	Squared Multiple Correlation	F Statistic
VIQ	.680	8.77**
PIQ	.461	3.52**
RDDIS	.528	4.61**
MADIS	.719	10.56**

*$p < .05$
**$p < .01$

intellectual functioning-verbal ($p < .01$; $F = 8.77$); intellectual functioning-performance ($p < .01$; $F = 3.52$); reading achievement grade discrepancy score ($p < .01$; $F = 4.61$); and mathematics achievement grade discrepancy score ($p < .01$; $F = 10.56$). The set of family risk variables significantly predicted children's intellectual functioning-verbal ($p < .01$; $F = 8.77$); intellectual functioning-performance ($p < .01$; $F = 3.52$); reading achievement grade discrepancy score ($p < .01$; $F = 4.61$); and mathematics achievement grade discrepancy score ($p < .01$; $F = 10.56$). Family risk variables accounted for 68% and 46% of the variance in intellectual functioning-verbal and intellectual functioning-performance, respectively. This same set of risk variables accounted for 53% and 72% of the variance in reading and mathematics grade discrepancy scores, respectively.

According to Fischer's protected t test procedures, all four performance variables met the $\alpha(.05)$ criterion and t tests were performed. The specific contributions of each family risk variable to the predictability of each child performance variable for Cohort 4 is shown in Table 25. Four risk variables significantly contributed to the predictability of VIQ: Active-Recreational Orientation ($p < .01$), Verbal Skills of the Primary Caregiver ($p < .01$), Achievement Orientation ($p < .01$), and Independence ($p < .05$). These same four risk variables significantly contributed to the predictability of MADIS (all variables, $p < .01$). For PIQ, Occupational Status was a significantly contributing risk variable ($p < .05$). The risk

Table 25

Raw and Standardized Regression Coefficients for Predicting 4 Child Performance Variables from Family Risk Variables and Tests of Significance for Cohort 4 (N=42)

Risk Variable	VIQ			PIQ			RDDIS			MADIS		
	Raw	Standard	t-value	Raw	Standard	t-value	Raw	Standard	t-value	Raw	Standard	t-value
OCPST	.128	.157	1.22	.230	.336	2.00*	.037	.226	1.44	.011	.074	.61
ACTRCO	-.557	-.313	-2.87**	-.365	-.244	-1.73	-.100	-.280	-2.12*	-.086	-.254	-2.49**
VRBSK	.375	.375	2.64**	.230	.274	1.49	.056	.281	1.63	.090	.478	3.59**
ACHVO	-.778	-.465	-3.74**	-.289	-.206	-1.28	-.058	-.173	-1.14	-.156	-.495	-4.24**
AEDR	1.470	.128	1.15	2.617	.272	1.88	-.117	-.051	-.38	.223	.103	.98
INDP	-.400	-.225	-1.98*	-.289	-.195	-1.32	-.048	-.135	-.97	-.089	-.265	-2.48**
QPHE	.313	.043	.35	-.815	-.134	-.84	.269	.185	1.24	-.096	-.070	-.60
ORGNZ	.034	.016	.14	-.448	-.246	-1.72	-.065	-.151	-1.13	-.039	-.095	-.92
Intercept	124.979	6.549	4.79**	130.154	8.135	4.59**	2.900	.761	.46	6.814	1.889	1.48

Note. The standardized regression coefficients are the raw regression coefficients divided by the standard deviations of the dependent variables and multiplied by the standard deviations of the independent variables.

$^{*}p < .05$
$^{**}p < .01$

variable, Active-Recreational Orientation, significantly contributed to the predictability of RDDIS ($p < .05$).

Cohorts 2 and 4. In order to complete the test of Hypothesis 2, it was necessary to test whether the regression functions constructed from Cohort 2 and Cohort 4 were significantly different. The test for equality of regression coefficients, according to the procedures outlined by Rao (1973), was conducted for each pair of regression equations derived for each of the four child performance variables.

The test for the equality of regression coefficients was carried out in the following steps: (a) for each dependent variable, the residual sum of squares from Cohort 2 was added to the residual sum of squares from Cohort 4; (b) Cohort 2 and Cohort 4 were combined to form a single sample ($N=96$) and the common regression equation and residual sum of squares was determined; (c) the mean squares of the separate regression (residuals) and common regression (residuals) were determined; and (d) the significance of the ratio of mean squares due to deviation from hypothesis to residual due to separate regressions was tested (Rao, 1973).

The hypothesis of equality of regression coefficients was rejected for three of the four child performance variables ($F_{(9,78)}(.05) = 2.04$). The hypothesis of equality was rejected for VIQ ($p < .05$; $F = 3.31$), RDDIS ($p < .05$; $F = 3.64$), and MADIS ($p < .05$; $F = 10.36$). The hypothesis of equality of regression coefficients was not rejected for PIQ ($F = 1.98$). These results indicated that the set of family risk variables combined in different ways to predict intellectual functioning-verbal and academic achievement grade discrepancy scores for younger as compared to older school-age children.

Summary

A sequence of statistical analyses were performed to test the hypothesis that the set of family risk variables identified in the test of Hypothesis 1 was differentially related to child variables that showed lower levels of performance for older (Cohort 4) versus younger (Cohort 2) children. Five child performance variables were found to be significantly lower for older children: VIQ, PIQ, FSIQ, RDDIS, and MADIS.

Two intellectual functioning (VIQ and PIQ) and two academic achievement (RDDIS and MADIS) variables, and the set of eight family risk variables were applied to a multivariate regression model. The set of family risk variables significantly predicted RDDIS and MADIS for both Cohort 2 and Cohort 4 and significantly predicted VIQ and PIQ for Cohort 4. The family risk variables accounted for a substantial amount of variance in child performance measures, ranging from 29% to 72% for relationships of significance.

Analysis of the partial contribution of each family risk variable to the regression function for each performance variable indicated significant contributions from all but two family variables: Quality of the Physical Home Environment and Organization. The results suggested that these two family variables were important in concert with the other variables tested but did not uniquely contribute to the prediction of child performance.

Finally, the test of the equality of the regression coefficients for each of the four performance variables resulted in rejection of the equality hypothesis for three performance variables: VIQ, RDDIS, and MADIS. In other words, the set of family risk variables had a different predictive relationship with VIQ, RDDIS, and MADIS for Cohort 2 as compared to their predictive relationship with VIQ, RDDIS, and MADIS for Cohort 4. These results suggested the differential relationship between the set of family risk variables and the performance of children at different stages of development.

Hypothesis 3

> Features of the physical, social, and psychological family environment are related to children's discrepancies in academic achievement, "discrepancy" defined as the difference between attained grade level to expected grade level for chronological age on measures of reading and mathematics achievement.

A multivariate linear regression model was used to examine the relationship between the family risk variables identified in the discriminant function analysis and children's discrepancies in reading (RDDIS) and mathematics (MADIS) achievement. Discrepancy scores for children in Cohort 2 and Cohort 4 were included in the multivariate regression analysis used to test Hypothesis 2, and thus will only be briefly reviewed here. The additional multivariate regression analysis conducted with the family risk variables and child performance variables for Cohort 3 will be discussed in detail below.

Cohort 2

Results of the multivariate regression analysis for Cohort 2 were given previously in Table 21. Two academic achievement discrepancy variables were the only two performance variables of the subset whose variances were significantly accounted for by the set of family risk variables. Thus, both subhypotheses under test for Cohort 2 were rejected ($F = 3.37 > F_{8,45}$ $(.05) = 2.18$ for RDDIS; $F = 2.26 > F_{8,45}$ $(.05) = 2.18$ for MADIS). A substantial portion of the variance in RDDIS (38%) and in MADIS (29%) was accounted for by the set of family risk variables.

Using Fischer's protected t test procedure (Cohen & Cohen, 1975), the partial contributions of each independent variable to the regression functions were examined. The risk variable with a significant partial contribution to the predictability of RDDIS and MADIS was Availability of Educational Resources in the Home. A significant contribution to the predictability of MADIS was also evident for the risk variable, Independence (see Table 22).

Cohort 3

Table 26 gives the correlations among family risk variables, and the correlations of the risk variables with child performance variables for Cohort 3. The same four performance variables, VIQ, PIQ, RDDIS, and MADIS, used in the test of Hypothesis 2 were used in this analysis. Generally low correlations (< .358) were evident, with the exception of Occupational Status and Verbal Skills of the Primary Caregiver which correlated .447.

Table 26

Correlations Among the 8 Family Risk Variables and Correlations of the Risk Variables with 4 Child Performance Variables for Cohort 3 (N=64)

	OCPST	ACTRCO	VRBSK	ACHVO	AEDR	INDP	QPHE	ORGNZ
ACTRCO	.054							
VRBSK	.447	.097						
ACHVO	-.087	.028	-.257					
AEDR	-.008	-.030	.066	.082				
INDP	.062	.071	.124	-.251	-.157			
QPHE	.358	.043	.302	-.026	.111	-.252		
ORGNZ	.200	.037	-.204	.343	-.006	-.097	-.001	
VIQ	.406	.112	.455	-.169	.231	.002	.211	-.015
PIQ	.300	.077	.279	-.218	.182	.133	.122	.061
RDDIS	.474	.078	.519	-.277	.086	.086	.111	-.026
MADIS	.442	-.023	.406	-.122	.150	.041	.311	.039

ote. Key to the variables is as follows:

OCPST - Occupational Status	QPHE - Quality of the Physical Environment
ACTRCO - Active-Recreational Orientation	ORNGZ - Organization
VRBSK - Verbal Skills of Primary Caregiver	VIQ - Intellectual Functioning - Verbal
ACHVO - Achievement Orientation	PIQ - Intellectual Functioning - Performance
AEDR - Availability of Educational Resources	RDDIS - Reading Achievement Grade Discrepancy Score
INDP - Independence	MADIS - Mathematics Achievement Grade Discrepancy Score

Results of the multivariate regression analysis of the family risk variables and child performance variables for Cohort 3 are presented in Table 27. The joint test of no linear relationship between the set of family risk variables and the four child performance variables was rejected for three performance variables ($F_{8,55}(.05) = 2.18$) The set of risk variables significantly predicted intellectual functioning-verbal ($p < .05$; $F = 2.96$); reading achievement grade discrepancy score ($p < .05$; $F = 4.42$); and mathematics achievement grade discrepancy score ($p < .05$; $F = 2.82$). It was the latter two performance variables that were of interest in testing Hypothesis 3. As shown in Table 27, the set of family risk variables accounted for 39% and 29% of the variance in RDDIS and MADIS, respectively. Thus, both subhypotheses under test for Cohort 3 were rejected.

Applying the procedures for Fischer's protected t test, the academic achievement discrepancy scores met the $\alpha(.05)$ criterion and t tests were performed. The partial contributions of each family risk variable to the predictability of RDDIS and MADIS for Cohort 3 are given in Table 28. Two risk variables significantly contributed to the predictability of RDDIS: Occupational Status and Verbal Skills of the Primary Caregiver ($p < .01$). Occupational Status also significantly contributed to the predictability of MADIS ($p < .05$).

Table 27

Squared Multiple Correlation of Each Child Performance Variable with 8 Family Risk Variables and Tests of Significance for Cohort 3 (N=64)

Variable	Squared Multiple Correlation	F Statistic
VIQ	.301	2.96**
PIQ	.203	1.75
RDDIS	.391	4.42**
MADIS	.291	2.82**

*p < .05
**p < .01

Table 28

Raw and Standardized Regression Coefficients for Predicting 2 Child Performance Variables from Family Risk Variables and Tests of Significance for Cohort 3 (N=64)

Risk Variable	RDDIS			MADIS		
	Raw	Standard	t-value	Raw	Standard	t-value
OCPST	.043	.339	2.60**	.025	.272	1.94*
ACTRCO	.009	.040	.37	-.011	-.067	-.58
VRBSK	.057	.371	2.87**	.026	.232	1.66
ACHVO	-.048	-.191	-1.62	-.009	-.051	-.40
AEDR	.111	.069	.64	.153	.131	1.13
INDP	-.014	-.055	-.47	.009	.050	.40
QPHE	-.170	-.151	-1.24	.117	.143	1.09
ORGNZ	.012	.041	.34	.012	.058	.44
Intercept	-4.625	-1.659	-1.22	-5.980	-2.950	-2.02*

Note. The standardized regression coefficients are the raw coefficients divided by the standard deviations of the dependent variables and multiplied by the standard deviations of the independent variables.

*p < .05
**p < .01

Cohort 4

Results of the multivariate regression analysis of Cohort 4 were given previously in Table 24. The set of family risk variables accounted for a significant amount of variance in all four performance measures ($p < .05$). This relationship was particularly strong for the academic achievement discrepancy scores, with 53% and 72% of the variance in RDDIS and MADIS, respectively, accounted for by the set of family risk variables. Thus, both subhypotheses under test for Cohort 4 were rejected ($F = 4.61 > F_{7,34}\ (.05) = 2.33$ for RDDIS; $F = 10.56 > F_{7,34}\ (.05) = 2.33$.

The partial contributions of each family risk variable to the regression functions for Cohort 4 were examined using Fischer's protected t test procedure. The risk variable that significantly contributed to the predictability of RDDIS was Active-Recreational Orientation. Four variables had significant partial contributions to the predictability of MADIS: Active-Recreational Orientation, Verbal Skills of the Primary Caregiver, Achievement Orientation, and Independence (see Table 25).

Summary

A multivariate regression analysis of the relationship between four child performance variables and the set of eight family risk variables was conducted separately for Cohorts 2, Cohort 3, and Cohort 4. The specific relationships between family risk variables and children's reading and mathematics achievement grade discrepancy scores were examined. Results indicated that for every cohort, the set of eight family risk variables accounted for a significant amount of variance in both reading and mathematics achievement grade discrepancy scores. Examination of the partial contribution of each risk variable to the regression functions revealed that the significantly contributing variables varied considerably across cohorts (Table 29). There was, however, similarity within cohorts in the variables that significantly predicted reading and mathematics achievement grade discrepancy scores. In summary, results of these analyses indicated that a specific set of family variables was related to children's discrepancies in academic achievement and further that this set of family variables varied in their importance depending upon the child's stage of development.

Table 29

Summary of the Significantly Contributing Risk Variables to the Prediction of RDDIS and MADIS for Cohorts 2, 3, and 4

Cohort	RDDIS	t-value	MADIS	t-value
2	AEDR	3.71**	AEDR	2.74**
			INDP	2.05*
3	OCPST	2.60**	OCPST	1.94*
	VRBSK	2.87**		
4	ACTRCO	-2.21*	ACTRCO	-2.49**
			VRBSK	3.59**
			ACHVO	-4.24**
			INDP	-2.48**

*$p < .05$
**$p < .01$

Chapter V

DISCUSSION

The purpose of the present study was to investigate the relationship between the physical, social, and psychological variables of the family environment and children's developmental performance on measures of cognition, academic achievement, and affective development. A sample of families having one or more children in remedial or special education was administered a multicomponent family asessment instrument. Children with remedial or special needs and their siblings were administered a battery of school-relevant performance measures. A series of multivariate analyses were conducted to delineate critical family environmental variables and the relationship between family variables and children's performance across four sequential age cohorts. Results of these analyses suggested the following major conclusions:

1. Families were accurately and meaningfully separated into high- and low-risk groups based on a statistically derived subset of family environmental process and status/situational variables.

2. Family risk status (high versus low), characterized by the subset of family variables, was related to the performance of school-age children across a subset of intellectual, academic, and affective measures. Children from high-risk families exhibited lower levels of performance as compared to children from low-risk families.

3. School-age children's performance was also related to their chronological age at the time of testing, and different developmental trends were observed across measures. There was no interaction between family risk status and children's age in their relationship to children's performance.

4. A "developmental lag" in skill attainment for high-risk children was supported by the findings that: (a) high-risk children exhibited lower levels of functioning than their low-risk age peers on measures of intellectual functioning-performance (children 4-6 years of age), cognitive problem-solving (children 4-10 years of age), and social competency (children 10-13 years of age); and (b) older, high-risk children performed significantly below younger, low-risk children on measures of intellectual functioning, academic achievement, and locus of control.

When family environment-child performance relationships were examined regardless of risk status, results of the analyses suggested these additional conclusions:

5. Older children (14-19 years of age) performed significantly below younger children (6-10 years of age) on grade discrepancy scores for reading and mathematics achievement, and the composite of family risk variables accounted for a substantial amount of the variance in achievement discrepancy scores for both groups.

6. The composite of family risk variables combined in significantly different ways to predict grade discrepancy scores for reading and mathematics achievement and intellectual functioning-verbal for younger as compared to older school-age children.

7. The composite risk variables accounted for a substantial amount of the variance in academic achievement grade discrepancy scores for the middle group of children (10-13 years of age). Examination of risk variable contributions to the predictability of achievement for each school-age cohort further supported the hypothesis that family influences varied in their importance depending upon the child's stage of development.

A discussion of these findings and the implications drawn from the results of this study are presented below.

Family Variables: A Composite Index of Risk

A series of multivariate analyses revealed that families could be differentiated into two distinctly different groups on the basis of a comprehensive assessment with quantitative measures. The resultant quantitative dimension was hypothesized as reflecting the extent of risk of the family home environment for the development of children's learning and behavior problems. There was minimal overlap in the high- and low-risk groups (one misclassified family), which suggested that the discriminant composite of family environmental process and status/situational variables meaningfully characterized two general types of families.

The validity of the composite index of risk was supported by the finding that children from high-risk families performed significantly below children from low-risk families across measures of cognitive functioning, academic achievement, and affective development. Comparison of high- and low-risk children's performances within and across age cohorts supported the notion of a "developmental lag" in high-risk children's school-relevant skill attainment. Thus, the eight-variable composite by which families were characterized as high or low-risk and which differentiated meaningfully among family environments also was found to be significant in environment-child performance relationships. A review and discussion of each of the family risk variables follows.

Status/Situational Variables

Three variables that described the family's home setting and socioeconomic status were among the variables that formed the discriminant composite: Occupational Status, Availability of Educational Resources, and Quality of the Physical Home Environment. High-risk families as a group had a significantly lower level of social status associated with their occupation, fewer learning materials and resources in the home, and a physical home environment of lesser quality as compared to low-risk families.

Occupational Status. To review, Occupational Status was determined for the parent contributing the greatest amount to the yearly family income according to the procedures outlined by Hauser and Featherman (1977). Scores on their Socioeconomic Index of

Occupational Status have been estimated from a regression equation predicting occupational prestige from two major occupational attributes: education and income levels. Index scores were paired with 1970 Census Occupational Codes, yielding the most current occupational status index available. In the present study, each head-of-household's Occupational Status score was derived from a standard, multiple-question format regarding employment (Mueller & Parcel, 1981). Also, employment information obtained by report from a spouse was corroborated and discrepancies resolved whenever possible. Thus, it was reasonable to assume that the Occupational Status variable reflected the current prestige or social status associated with the occupation of the family's main wage earner.

It is noteworthy that the measure of socioeconomic status used for families was based solely on occupational information, in contrast to other "summary" measures which typically include individual income, educational level, and occupational status in some combination to define socioeconomic status. In the present study, each of these variables was entered separately into the discriminant analysis and it was the Occupational Status variable that most accurately distinguished the high-risk from the low-risk group in combination with the other composite variables. In other words, Occupational Status was the predominant feature among other related sociodemographic features in discriminating between families.

The importance of Occupational Status in the study sample suggested the possible influence of individual attributes often associated with occupations of higher social value: personal pride in one's success, greater job satisfaction, and greater self-confidence related to work. As Deutsch (1973) noted:

> To consider the prestige dimension of SES designations, again it is plausible to assume that a person whose occupation is held in some esteem by the community is more likely to see himself as a worthy person and that this self-acceptance, in turn, will color his relationship with his children, which in turn, will influence the children's development (p. 240).

Results of the present study indicated that children from families headed by parents in higher prestige occupations were more skilled on intellectual and academic tasks than children from families headed by parents employed in jobs of lesser social status. In both worlds of work and school, task-relevant behaviors such as perseverance, job completion, accuracy, and speed are valued behaviors that often lead to higher levels of achievement, self-esteem, and self-confidence. The importance of parental modeling of these behaviors through their occupational endeavors was suggested by study findings.

Moreover, the child who finds himself with a less effective parental model may also be affected by individual attributes sometimes associated with occupations of lower social value: personal frustration, job dissatisfaction, and low self-esteem. Adults in jobs represented in the lower social class are more likely to work evenings, and these work schedules are likely to influence family organization and opportunities for adult-child interaction (Deutsch, 1973). Bronfenbrenner's (1977) study of stress in families provides additional support for the notion that parents in lower status jobs may have difficulty facilitating learning for children in the home. Based on interviews with several hundred families, he found that families that were under more stress than others tended to be "blue-collar" families who had two or more children, and both parents living at home. In the present study sample, the majority of high risk families matched the demographic characteristics of Bronfenbrenner's high-stressed families.

Availability of Educational Resources. A second status/situational variable of importance was the extent to which materials and resources for learning were available to children in the home setting. A cumulative index of educationally relevant items (e.g., books, toys, record player) was developed from interview questions such as "Would you mind telling me which of the following things you have . . . television . . . radio . . . record player . . . etc." Items and materials observed in the home and accessible to children were also recorded by home interviewers over the course of two-to-three home visits using techniques of anecdotal recording and a post-interview observation list. With these multiple methods of measurement, it appeared that the material learning environment of the home, reflected in items for self-initiated or parent-directed activities, was adequately assessed by the home interviews.

The importance of educationally relevant materials in the home has been supported in other studies of family environment-child performance relationships for nonhandicapped (Dave, 1963; Elardo et al., 1975; Henderson, 1981; Riccuitti, 1977; Shipman et al., 1976) and handicapped children (Meyerowitz and Farber, 1966; Nihira, Meyers, & Mink, 1980). What is particularly important, however, is the evidence supporting the importance of educational resources within social classes. Shipman et al. (1976) found that within a low-income sample of families, the greater availability of material resources was associated with higher scores on measures of academic achievement and analytic-perceptual ability. Similarly, Riccuitti (1977) has drawn attention to the consistent differences in children's developmental outcomes associated with relatively small variations in socioeconomic status within very low-income populations. These variations reflected, in part, the "resourcefulness" of the family, i.e., selling handmade goods in order to purchase play things for children or providing service-in-kind in exchange for desired materials (Riccuitti, 1977).

The Availability of Educational Resources in the home was shown to be an important aspect of the family learning environment in the present study. The extent to which materials were present was not related to income for the study sample, suggesting that it was not the amount of money the family had to purchase these items that was the determining factor, but rather what they chose to purchase. The materials they did buy reflected, at least in part, their knowledge and value of things that were likely to enhance their children's development.

It appears that it is not simply the amount of income that a family possesses that is important, but how it chooses to use its financial resources. In the absence of a great deal of money for "extras," i.e., beyond household necessities such as food, rent, heat, etc., the Availability of Educational Resources in the home may also reflect the family's resourcefulness in obtaining materials for learning from rummage sales, neighbors, relatives, etc., and what value it places on the need for educational stimulation of its children.

Quality of the Physical Home Environment. The third status/situational variable contributing to the discriminant composite reflected the adequacy of physical amenities (e.g., stove, refrigerator, running water) and the pleasantness of surroundings (e.g., plants, pictures on the walls, rooms reasonably clean and not overcrowded). A cumulative index of items was drawn from the Home Observation for Measurement of the Environment-HOME-Elementary Inventory, recently developed by Bradley and Caldwell (1982). A subscale of this experimental version was developed to tap the condition of the home setting.[1]

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[1] Most recently, Bradley (personal communication) analyzed data on the reliability of the elementary HOME and obtained an internal reliability coefficient of .84 for the physical quality subscale. Bradley's reliability coefficient was based on observations from one visit per home, in contrast to the multiple visits conducted in the present study.

An inadequate physical home environment has been most often linked to the lower levels of achievement observed for "disadvantaged" or low-income children, as compared to their middle- or upper-income peers (Deutsch, 1973; Christiansen et al., 1974; Klein et al., 1974). Lower quality housing and physical amonities have also been associated with an increased likelihood of mild mental retardation (Birch et al., 1970; Heber et al., 1968), emotional and behavioral disturbances (Richman et al., 1975; Rutter et al., 1975; West & Farrington, 1973), and reading difficulties (Davie et al., 1972). Deutsch (1973) has commented that

> . . . the amount of income is a prime determinant of location and type of residence and amount of consumer goods which can be acquired, and that these variables in turn determine the exact physical home environment of the child (p. 240).

In the present study, Quality of the Physical Home Environment was an important feature in differentiating between high- and low-risk families independent of family income and occupational status. Again, it appears that it is not the amount of income that is the determining factor in the quality of the home setting, but rather the value that is placed on a quality physical environment that influences the family's allocation of fiscal resources.

In summary, the three status/situational variables each uniquely contributed to the high-risk-low-risk classification of families, in concert with other process variables forming the discriminant composite. By examining status/situational and process variables in combination, it was possible to test the importance of the environmental setting in which family processes occurred. This approach has been advocated by Bradley and Caldwell (1978) who stated, "The significance of environmental processes for a child's development may depend to a considerable extent on the particular environmental context in which they are manifest (p. 126)." Results of the present study indicated that the prestige of the family's main wage earner and the use of financial resources for educational materials and home upkeep were important features in defining the environmental setting.

Process Variables

Five variables significantly described the family processes and contributed to the discriminant composite: Verbal Skills of the Primary Caregiver, Active-Recreational Orientation, Achievement Orientation, Independence, and Organization. High-risk families as a group had a primary caregiver with a significantly lower verbal skill level, and expressed significantly less emphasis on the processes reflected by the four other composite variables.

Verbal Skills of the Primary Caregiver. In the study sample, all but one family recognized the mother as the primary caregiver, i.e., the parent who had the major responsibility for caring for the children. Primary caregivers were administered the Peabody Picture Vocabulary Test-Revised-PPVT-R (Dunn & Dunn, 1981), a multiple choice test designed to evaluate receptive vocabulary skills. In the revised edition, words were selected to include a relatively good balance of nouns, gerunds, and modifiers in nineteen content categories (Sattler, 1982). The test is untimed, requires no reading ability, and neither oral nor pointing response is essential.

The PPVT-R clearly is but one facet of an individual's language ability repertoire. The test does, however, provide an estimate of verbal ability based on the individual's comprehension of the spoken word. As described by Zimmerman and Woo-Sam (1973), "Vocabulary indicates sensitivity to new information and ideas and the ability to store and associatively regroup these as the occasion demands. By inference it reveals classificatory and conceptual skills (p 108)." The PPVT-R has been most highly correlated with other measures of vocabulary, and moderately correlated with measures of scholastic aptitude and intellectual functioning (Dunn & Dunn, 1981; Sattler, 1982; Zimmerman & Woo-Sam, 1973).

The importance of the child's language environment for learning has received considerable support in the studies of family environment-child performance relationships. An impoverished language environment, i.e., simpler, less elaborated, less discriminating, has been associated with lower class, disadvantaged families (Hess & Shipman, 1965), less educated families (Streissguth & Bee, 1972), and families with language-delayed children (Wulbert, Inglis, Kriegsmann, & Mills, 1975). The role of parents in creating a quality language environment has been variously described; a language model (Dave, 1963); valuing language (Henderson et al., 1972); verbal responsivity (Bradley & Caldwell, 1975a); and providing opportunities for generating verbal responses (Price, Hess, & Dickson, 1980).

Results of the present study provide additional support for the importance of the child's language environment in attaining educationally relevant skills. The PPVT-R, an estimate of the verbal skills of the primary caregiver, significantly contributed to the separation of families into high- and low-risk groups. In subsequent analyses, high-risk children performed significantly below low-risk children across a subset of intellectual, academic, and affective measures. It seems plausible that parents with higher skill levels provided better language models for their children and were able to involve them in conversations that were more relevant, distinctive, and richer than parents with lower skill levels. The consistent association between the quality of the language environment and children's academic and intellectual achievement suggests an important "school-supportive skill" for parents.

Family Environment Scale Process Variables. Four process variables contributing to the discriminant composite were derived from the Family Environment Scale-FES (Moos & Moos, 1981). The FES is comprised of 90 true-false items yielding ten subscales designed to measure an individual's perception of the "social climate" of their family environment. Each of the ten FES subscales have been grouped under one of three sets of dimensions by the authors: the Relationship dimensions, the Personal Growth dimensions, and the Systems Maintenance dimensions. In the present study, three of the process variables were considered Personal Growth dimensions: Active-Recreational Orientation, Achievement Orientation, and

Independence. The remaining process variable, Organization, was considered a Systems Maintenance dimension.

A substantial body of literature supports the usefulness of the FES in describing different types of normal families (Reinhart, 1977; Lee & Rohbock, 1979); discriminating between normal families and families in crisis/treatment (Lange, 1978; White, 1978); predicting treatment outcomes (Ford, Bashford, & DeWitt, 1979; Bromet & Moos, 1977); differentiating between families of handicapped as compared to nonhandicapped children (Saur, 1980); identifying child-rearing attitudes associated with family dimensions (Schneewind & Lortz, cited in Moos & Moos, 1981); and identifying the relationship between children's behavior and/or academic problems and family dimensions (Draper, 1977; Fowler, 1980; Janes & Hesselbrock, 1976).

In the present study, the short form of the FES (40 items; 4 items per subscale) was administered to the primary caregiver. Thus, in all but one family it was the mother's perception of the family that was represented in the subscale scores. It is also important to note that the FES was administered towards the end of the Interview Schedule, i.e., during the last home visit, after a considerable amount of rapport had been built between the interviewer and the parent.

FES: Active-Recreational Orientation. This family process variable reflected the extent to which the parent perceived the family as actively participating in various kinds of social and recreational activities (Moos & Moos, 1981). The items that comprised the short form subscale included the following:

1. We spend most of our weekends and evenings at home. (T/F)

2. Friends often come over for dinner or to visit. (T/F)

3. Nobody in our family is active in sports, Little League, bowling, etc. (T/F)

4. We often go to movies, sports events, camping, etc. (T/F)

Low-risk families more often chose the response suggesting active involvement (underlined responses), in comparison to high-risk families who perceived themselves as less involved in leisure, sports, and socialization outside of the family unit.

Some support for the importance of the family's social and recreational activities in children's development is evident in the conceptualizations of earlier research findings. Dave (1963) found "stimulation provided in the home to explore various aspects of the larger environment," was associated with elementary-aged children's academic achievement. Similarly, Wolf's (1964) process variable, "provision of opportunities for general types of learning in a variety of situations," was important in children's intellectual functioning. Caldwell and her colleagues have found "opportunities for variety in daily situation," is important for young children's skill attainment (Bradley & Caldwell, 1976a, 1976b, 1977; Elardo et al., 1975, 1977). Marjoribanks (1979) has identified a family environmental process variable termed, "activeness," as contributing to child performance differences across a variety of measures. "Extended interests and community involvement," was associated with higher levels of performance in a study by Henderson et al. (1972).

Results of the present study supported an active family orientation in the development of children's educationally relevant skills. The family process variable contributing to the discriminant composite specifically emphasized social and recreational activities that families participated in together, as well as encouragement for children to spend leisure time outside of the home environment. This variable may also reflect the family's value of enjoyment and fun, together and as individual members.

FES: Achievement Orientation. The family's Achievement Orientation was defined as the extent to which the parent perceived the family as casting different types of activities (e.g., school, work) in an achievement-oriented or competitive framework (Moos & Moos, 1981). This FES subscale included the following items:

1. We feel it is important to be the best at whatever you do. (T/F)

2. Getting ahead in life is very important in our family. (T/F)

3. How much money a person makes is not very important to us. (T/F)

4. We believe in competition and "may the best man win." (T/F)

Low-risk families more often chose the response suggesting competency, competition, and success (underlined responses), in comparison to high-risk families who were less likely to perceive themselves as achievement-oriented.

An emphasis on achievement as an essential family process has been a common thread throughout the child development literature. Almost all of the major process studies of family environment-child performance relationships cited in this chapter have identified "press for achievement," "achievement motivations," "achievement expectations," or some similar variable as a significant family influence in children's academic achievement. Results of the present study lend additional support to the importance of an achievement orientation that is communicated to children through the family.

By studying both status/situational and process variables, it is possible to examine the interrelationships among the variables to further understand the phenomenon. In the study sample, neither Family Income nor Occupational Status was significantly correlated with Achievement Orientation. As might be predicted, however, Educational Attainment of the father (but not the mother) was significantly correlated with Achievement Orientation. These results suggest perhaps that the influence of this process is through the verbal communication of achievement-oriented values, encouragement of competition in school and recreational activities, and parental modeling of educational goals.

FES: Independence. This process variable reflected the parent's perception of the extent to which family members were encouraged to be assertive, self-sufficient, to make their own decisions, and to think things out for themselves. The four subscale items measuring the perceived degree of Independence were as follows:

1. We don't do things on our own very often in our family. (T/F)

2. In our family, we are strongly encouraged to be independent. (T/F)

3. We think things out for ourselves in our family. (T/F)

4. We come and go as we want to in our family. (T/F)

Low-risk families more often perceived themselves as encouraging independence (underlined responses) as compared to high-risk families who more often chose the response suggesting less assertiveness and less self-initiated behavior.

There is relatively little evidence supporting the importance of family emphasis on independence in children's school-relevant, skill development. Unfortunately, the lack of evidence appears to be due to the omission of this family variable from most studies of family environment-child performance relationships. The work of Marjoribanks (1972, 1979) is among the exceptions. In modeling and investigating his view of family learning environments, he postulated a "press for independence" among his eight environmental forces. This process variable was defined by the family's provision of freedom and encouragement to explore the environment and the family's stress on early independence. Marjoribanks found that "press for independence" was significantly related to elementary-aged boys' verbal, number, and reasoning ability.

A few other studies have used the FES in examining children's skill attainment (Moos & Moos, 1981). For example, Janes and Hesselbrock (1976) found that teenagers who perceived their families as stressing independent thought and action were rated by their teachers as higher in reasoning ability, verbal interaction, and intellectual independence, and demonstrated better work habits.

Results of the present study point to the importance of teaching and supporting independence in children, and also suggest the usefulness of self-sufficiency and individual decision-making in children's ability to benefit from their school experiences.

FES: Organization. One final variable contributed to the discriminant composite. Organization measured parent's perception of the degree of importance of clear organization and structure in planning family activities and responsibilities (Moos & Moos, 1981). Items comprising the short form subscale included:

1. Activities in our family are pretty carefully planned. (*T*/F)
2. We are generally very neat and orderly. (*T*/F)
3. It's often hard to find things when you need them in our household. (T/*F*)
4. Being on time is very important in our family. (*T*/F)

Low-risk families more often perceived the family as an organized, orderly unit (underlined responses), as compared to high-risk families who were more likely to choose responses suggesting disarray and laxity.

Support for the importance of family organization is found in Dave's (1963) study, where work habits in the home, i.e., level of organization and use of routine in managing home responsibilities, was associated with higher levels of academic achievement for elementary-aged children. Conversely, family disorganization has been associated with the development of antisocial behavior. Garmezy (1974) and Hetherington et al. (1977) reported children were likely to exhibit aggressive behaviors when their home environment was characterized by a lack of communicated standards, and few established routines for family responsibilities. Fowler (1980) found that signs of shyness and anxiety were associated with lower levels of family organization and structure.

The importance of family organization in children's school-relevant skill attainment was supported by results from the present study. It seems likely that children's experience with consistent planning, structure, and rules in the family environment would facilitate their transition to and participation in the more rigid demands of the school environment.

A Preliminary Model

It has been emphasized throughout the discussion that each of the eight family variables significantly contributed to the differentiation of families into high- and low-risk groups. It is important to remember, however, that it was the combined influence of the eight variables that accounted for group differences. This study departs from many other studies of the family environment in that multiple conditions and processes were examined simultaneously, rather than relying on single variable relationships. To review, study results indicated that high-risk, as compared to low-risk families, were more likely to have a primary caregiver of lower verbal skills; gave less emphasis to family participation in social and recreational activities; gave less encouragement to achievement striving; gave less emphasis to family members acting independently; and revealed a less structured environment in terms of rules and responsibilities.

The analysis of both status/situational and process variables together can provide a preliminary model of important environmental setting variables and the family processes by which these setting variables are mediated (Figure 7). In this model, a family with a high prestige head-of-household, living in a pleasant and educationally stimulating environment, may affect the development of competence in the child by making the five processes more or less likely to occur, more or less pertinent, and more or less pleasurable. For example, more educational resources may provide a variety of means for encouraging achievement and perhaps, independence in task completion. Independence and organization may be more easily encouraged in a household that is safe, orderly, and well-equipped. Discussions between spouses concerning accomplishments at work may provide enhanced opportunities for language modeling and models of achievement. On the other hand, job dissatisfaction may decrease the opportunities for the family to engage in enjoyable social and recreational activities. An unkept,

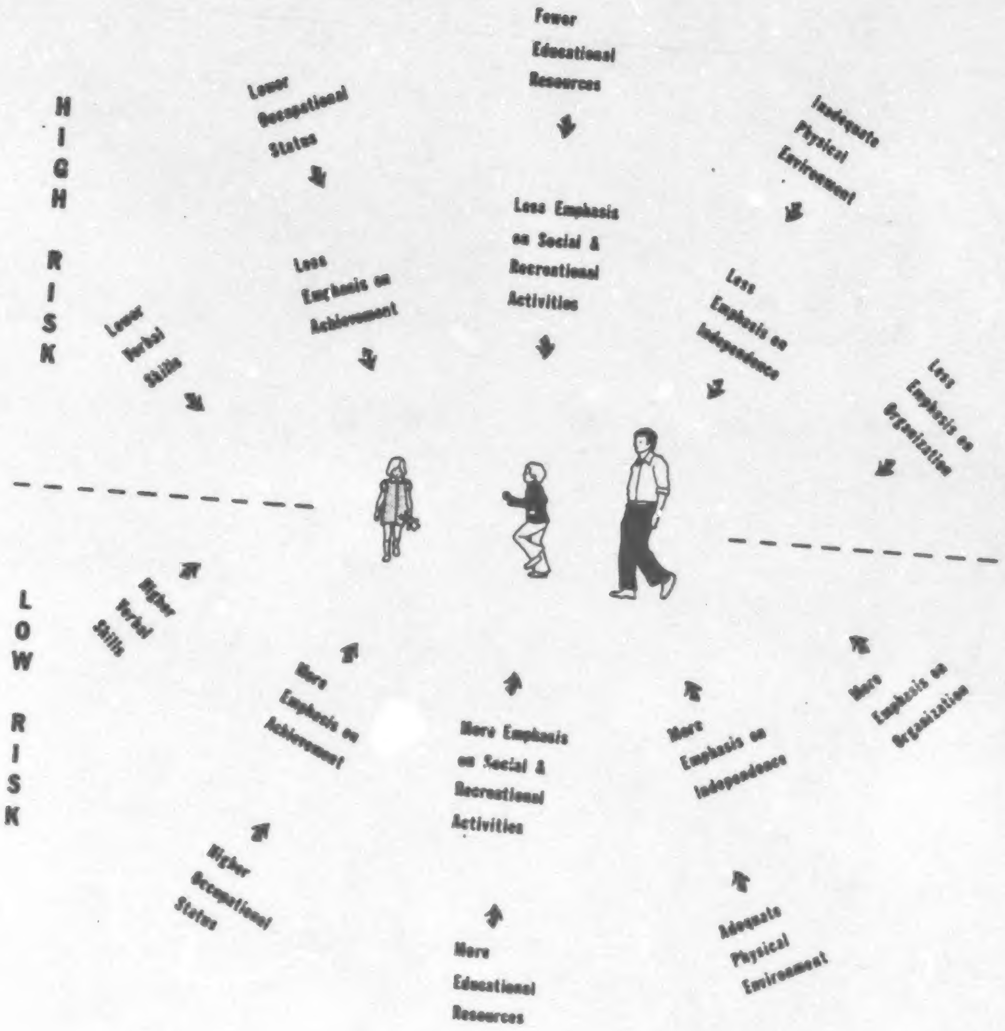
HIGH RISK
Lower Occupational Status
Fewer Educational Resources
Inadequate Physical Environment
Less Emphasis on Achievement
Less Emphasis on Social & Recreational Activities
Less Emphasis on Independence
Lower Verbal Skills
Less Emphasis on Organization
LOW RISK
Higher Verbal Skills
More Emphasis on Achievement
More Emphasis on Social & Recreational Activities
More Emphasis on Independence
More Emphasis on Organization
Higher Occupational Status
More Educational Resources
Adequate Physical Environment

Figure 7. A Preliminary Model Relating Family Setting and Processes to Children's Developmental Performance

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chaotic home environment may decrease the effectiveness of attempts at family organization. Indifference toward one's job, and a home environment that is monotonous or unpleasant may decrease the likelihood of lively and rich conversation, and the opportunity for verbal skills development through modeling and participation. These examples are intended to suggest possible ways in which environmental setting variables may be mediated by family processes in high-risk and low-risk family environments.

An exploration of the importance of each of the eight provided additional insight into the nature of variables within each risk group these family environments. Among high-risk families, Independence had the greatest importance, i.e., weight, compared to being sixth in importance for low-risk families. This finding suggests that the family's lack of encouragement of independence was a predominant influence in shaping the family environment. The Availability of Educational Resources was the most important variable of the composite for low-risk families, in contrast to its lesser importance for high-risk families (fourth). Groups also differed quite widely in the importance of Occupational Status, although this variable was among the bottom four for both groups (high-risk, eighth; low-risk, fifth). These results suggested that the strength of the environmental setting and the importance of family processes by which the setting was mediated was different for each risk group.

The notion that family processes act as mediators of environmental conditions and circumstances has been suggested by other investigators. Based on their review of twelve analytic models, Walberg and Marjoribanks (1976) suggested that the statistical relationship between socioeconomic status and child development that is unmediated by (i.e., does not include) environmental process variables is likely to be an artifact of the particular SES measure used or the population studied. Pringle's (1975) experience with the National Child Development Study led her to conclude that, "For the child it [the family] is of unique importance because it mediates between him and the world at large, providing what might be called a buffer, a filter, and a bridge (p. 107)."

Feuerstein (1980) has taken the mediational role of the family a step further in constructing a theory of "mediated learning experience" in children's cognitive development. He has proposed a model of "distal" and "proximal" determinates of differential cognitive development. Distal determinants include variables such as socioeconomic level, educational level, level of environmental stimulation, emotional health of child and parents, organicity, cultural difference, and genetic factors. In Feuerstein's model, deficiencies in one or more of these factors increase the likelihood of inadequate cognitive development, but neither directly or inevitably causes mental retardation. The proximal (nearest) determinant is reduced exposure to or absence of mediated learning experience resulting in mental retardation. Feuerstein (1980) defines the concept of mediated learning experiences as

> . . . the way in which stimuli emitted by the environment are transformed by a "mediating" agent, usually a parent, sibling, or other caregiver. . . . The mediator selects stimuli that are most appropriate and then frames, filters, and schedules them; he determines the appearance or disappearance of certain stimuli and ignores others (p. 16).

The theory of mediated learning experiences in children's cognitive development is consistent with the model presented in Figure 7 with respect to the mediational role of the family. In Feuerstein's model, the process of mediating of distal factors affects the cognitive structure of the developing child. Results of the present study suggest that the three distal (environmental setting) variables and five proximal (family process) variables act in concert to influence children's cognitive, academic, and affective functioning.

Risk-Related Performance Differences In Children

School-Age Children

The validity of the eight-variable composite index of risk was examined through a multivariate analysis (MANOVA) of the effects of family risk status and chronological age on children's measured performance. The subset of eight performance measures tapped children's intellectual skills on verbal and performance subtests of the Wechsler scales, widely used tests of intellectual functioning; accuracy of problem-solving on a match-to-sample task; and reading and mathematics grade achievement, defined by the discrepancy between attained (measured) to expected for chronological age. The dependent variables also included a measure of the extent to which children attributed the causes of their behavior to forces outside of their control (locus of control), and a measure of social competency, assessed by a teacher rating scale. Thus, children's performance across these measures represented a comprehensive view of school-relevant skills and behaviors.

Children were grouped for analysis on the basis of family risk status (high versus low) and their chronological age: 6 years, 7 months to 10 years, 0 months (Cohort 2); 10 years, 1 month to 13 years, 11 months (Cohort 3); and 14 years, 0 months to 19 years, 11 months (Cohort 4). The grades of children in these age cohorts generally corresponded to grades 1 through 4, grades 4 through 8, and grades 8 through 12, with some overlap in grade range. Roughly half of each cohort was made up of females, with the total sample of children made up of 52% females and 48% males.

The composition of children from various educational needs in each cohort suggested heterogeneous groups of children with regard to intellectual functioning. However, review of the means and standard deviations of children's intellectual performance measures for risk groups indicated that in each cohort, children were functioning within the "average" range and closely represented a normal distribution of functioning levels. In other words, children in the study sample were much more homogeneous with regard to intellectual functioning than their school diagnoses of educational needs suggested.

In the MANOVA design, children became a member of the high or low-risk group on the basis of their family's risk status. The assumption in this design was that children, from youngest to oldest, can be viewed as representative of familial influences on the developmental processes over time and thereby reflect the changing nature of development and risk. In the present study, the at-risk nature of children's family environments was characterized by the family's position on the environmental setting variables and their level of emphasis on the five key processes identified. The physical, social, and psychological milieu created by the family was in essence the "treatment."

Results of the MANOVA indicated significant main effects for family risk status and age, with no interaction effects. It was concluded that high-risk family environments contributed to lower levels of performance for children living in these families. High-risk children exhibited lower levels of performance than low-risk children across the measures of intellectual, academic, and affective functioning.

Children's chronological age at the time of testing was also found to affect their performance, although the direction of effects was less clear. Most notably, declines in performance levels from younger to older cohorts were observed for measures of intellectual functioning and for mathematics achievement. These declines were evident for both the high- and low-risk children, suggesting that both groups of families were influencing children's development in similar ways. The lower level of performance for high risk children suggested the more pronounced effect of high-risk environments.

Two other trends in children's performance were noticeable. For both high- and low-risk groups, children became more competent in solving the cognitive match-to-sample task and perceived themselves as less internal, i.e., increasingly perceived their behavior as more under their control. These findings suggested the developmental nature of these tasks, although the increases in cognitive skill and internality were still consistently lower across cohorts for high-risk children. For the measure of social competency, opposite trends were observed for high as compared to low-risk children. High-risk children 6-10 years of age were rated as significantly below their low-risk peers in the area of school-relevant social skills, e.g., volunteers answers in the classroom. However, with increasing age, high-risk children showed increasingly more social competencies while low-risk children exhibited decreasingly fewer social competencies, as rated by their teachers. These results suggested the role of schools and peers in facilitating the social development of children whose family environments represented a higher risk for school problems. Conversely, these findings suggested that children who possessed adequate social skills in the elementary grades were unable or perhaps unwilling to comply with the social demands of the high school environment.

Further exploration of the individual mean performances of high- and low-risk children within and across cohorts indicated significant performance differences. High-risk children 10-13 years of age exhibited significantly lower levels of intellectual functioning than low-risk children 6-10 years of age. Older, high-risk children (14-19) performed well below the younger, low-risk children (6-10) on a measure of intellectual functioning-performance, reading and mathematics achievement, and locus of control. This older, higher-risk group also performed below the middle group (10-13) of low-risk children in the academic achievement areas. However, with increasing age, the performance of high-risk children converged on the performance of low-risk children on almost all measures. Taken together, these findings supported the notion of a "developmental lag" in skill attainment for high-risk children across an array of important school-relevant skills. Deutsch (1973) and others have commented on the finding that low-SES children have been found to "lag" behind their middle-SES peers on verbal skills measures and standard intelligence tests. Having discussed the importance of SES as one of a composite of important family variables, results of the present study provided some support for a developmental lag in the skill attainment of high-risk children.

Preschool/Kindergarten Children

The influence of high-risk environments was also examined for a group of children age 4 years, 2 months to 6 years, 10 months. Forty-five percent of the cohort was female. Sixty-eight percent of the children had exceptional needs, 5% had remedial needs, and 27% were in the school's regular kindergarten program.

Multivariate analysis of the effects of family risk status across eight preschool performance measures did not support the importance of the high-risk/low-risk differentiation of families. However, analysis of individual performance means did result in significant differences on the match-to-sample task and on the measure of intellectual functioning-performance. These measures were downward extensions of the instruments used with school-age children and thus suggest some comparability. A lower level of cognitive problem-solving provided some support for an early developmental lag for high-risk children in a cognitive skill area that appeared developmental in nature. With regard to intellectual functioning-performance, the lower level of skill exhibited by high-risk children was consistent with the performance of increasingly older, high-risk children, i.e., significantly lower levels of performance for high-risk children when compared to low-risk peers. The findings suggested the early and persistent relationship between high-risk family environments and the development of skills such as figure-ground relationships, visual and sequential memory, and analytical thinking.

Family Risk Variables and Children's Developmental Performance: An Exploratory Analysis

Prepotency of Risk Variables in Children's Performance Declines

The design of the present study was based on the hypothesis that there are multiple and interreacting family factors operating to shape children's development and that they vary in combinations and impact depending upon the child's stage of development. Moreover, it was hypothesized that the family variables comprising the composite index of risk were associated with performance declines observed for older as compared to younger children (irrespective of family risk status), and that the relative importance of the risk variables varied for older as compared to younger children. Thus, the prepotency of family variables at different stages of child development for a specific group of school-relevant skills was explored in this phase of the study.

In the first step of the analysis, significantly lower levels of performance for older (14-19 years of age) as compared to younger (6-10 years of age) children were identified. Performance deficits were evident for measures of intellectual functioning-verbal and performance, and reading and mathematics achievement discrepancy scores, i.e., the difference between attained to expected grade achievement for chronological age. Thus, low discrepancy scores suggested more appropriate achievement for the child's grade level, and high discrepancy scores suggested less appropriate or lower achievement for grade level. Performance declines were also observed on measures of receptive vocabulary and self-acceptance, though not reaching statistical significance.

The four child performance measures and the eight family risk variables were applied to a multivariate linear regression model, a separate analysis for the younger and for the older cohort. For younger children, the set of family risk variables accounted for a substantial amount of the variance in both reading (38%) and mathematics (29%) achievement discrepancy scores. For older children, this same set of risk variables accounted for a significant amount of the variance in reading achievement discrepancy scores (53%), mathematics achievement discrepancy scores (72%), intellectual functioning-verbal (68%), and intellectual functioning-performance (46%). The substantial associations between children's performances and the set of family risk variables suggested the importance of multiple aspects of the family environment in facilitating or impeding academic skill attainment throughout children's school years.

For older children, results suggested multiple aspects of the family environment were also important in facilitating intellectual growth. This finding stands in contrast to many studies that have over the last two decades focused almost exclusively on the preschool years as most important in determining children's intellectual growth (Bloom, 1964; Clarke-Stewart, 1977; White & Watts, 1973).

Subsequent analyses revealed that family risk variables combined in significantly different ways to predict reading and mathematics achievement discrepancy scores and intellectual functioning-verbal for younger as compared to older children. The nature of these differences was explored by identifying risk variables that uniquely contributed to the predictability of children's performances for Cohort 2 and Cohort 4 in the area of academic achievement discrepancies. Discussion is limited to this area since academic variables were the only performance variables significantly predicted by the set of risk variables for both Cohort 2 and Cohort 4. It is important to note that the multivariate regression analyses revealed the importance of each risk variable, in the presence of other risk variables. Thus, interpretation of the contribution of each risk variable was in its relationship to the other composite variables.

For Cohort 2, family risk variables combined to significantly predict children's reading achievement discrepancy scores, and one risk variable uniquely contributed to prediction: Availability of Educational Resources in the Home. However, for this cohort, a high level of educational resources, in concert with other risk variables, was associated with high reading discrepancy scores. Similarly, a high level of educational resources and a high level of Independence was associated with high mathematics discrepancy scores. This finding suggested perhaps that for children in the elementary grades, an emphasis on many educational materials and active encouragement of independence discouraged an interest in school and school-related tasks, including the in-school testing done for this study.

Alternately, these process variables may have reflected a high level of achievement expectation on the part of parents to which the child was negatively responding. A third interpretation was that parents were responding to their child's poor reading and mathematics achievement by obtaining more learning materials and encouraging more self-initiated learning. On the other hand, results for Cohort 2 also suggested that less emphasis on educational resources and independence, in combination with the influence of the other family variables, may have provided a more adequate home environment for learning.

For Cohort 4, one risk variable uniquely contributed to the predictability of reading achievement discrepancy scores. The emphasis on an Active-Recreational Orientation of the family was associated with low reading discrepancy scores. Low mathematics discrepancy scores were associated with high scores on four family process variables: Active-Recreational Orientation, Achievement Orientation, Independence and Verbal Skills of the Primary Caregiver. These results suggested that for adolescents, multiple aspects of the family were important in facilitating academic skill attainment.

Results for Cohort 4 also suggested that a reduced emphasis on the family processes identified may have resulted in higher discrepancy scores. One possible interpretation of this notion is that as children grow up, peers, school and other agents outside the family generally become more important influences on behavior. This separation from the family may be even more pronounced if the child is experiencing learning and/or behavior problems, and failing to meet the parents' expectations for achievement and future job success. Results of the present study suggested that active involvement with the family, coupled with the encouragement of independence, achievement, and language development, contributed to fewer academic difficulties for adolescents.

To review, results of the study indicated that with increasing age, children cumulate greater deficits in reading and mathematics skills. At both younger and older ages, family risk variables predicted children's achievement discrepancy scores, thereby suggesting their influence on children's declining performance. In addition, the prepotency of the risk variables was different for younger as compared to older children. These findings provided support for the importance of the eight family variables in characterizing the at-risk nature of the family learning environment. Although exploratory in nature, results also suggested the *continuous* and *changing* role of the family environment in promoting or impeding children's academic skill attainment.

Support for the interpretations drawn for this study has been derived from early studies of disadvantaged families, which suggested that the continuous adverse affects of an impoverished home environment contributed to declines in children's intellectual functioning with increasing age (Asher, 1935; Douglas, 1964; Gaw, 1925; Gordon, 1923; Sherman & Key, 1932; Wheeler, 1942). Declines in academic achievement with increasing age have also been observed for disadvantaged children (Kennedy, 1969; Osborne, 1960). Deutsch (1973) and others have referred to the phenomenon of declining performance with increasing age as a "cumulative deficit." This term, however, has for the most part been used to describe the perceived effects of substantial disadvantagement, i.e., very low/no income, dilapidated housing, crowding, extreme isolation, etc.

Some attention has been given to the effects of family processes over time in less disadvantaged families. In a longitudinal study of Head Start families, Shipman et al. (1976) found that positive changes in certain family processes over time (e.g., mother's community involvement, frequency of reading) accounted for significant increases in children's achievement from preschool to grade 3. Bradley and Caldwell (1976b) examined the relationship between the HOME and increases and decreases in mental test performance of children from 6 to 36 months of age. Results indicated that decreases in child performance were associated with less maternal involvement, fewer play materials, and a less organized home environment. These and other studies suggest that the developmental needs of children vary with age and highlight the importance of identifying family processes that are necessary supports for effective child development.

Risk Variables and Academic Achievement: Children 10-13 Years of Age

The relationship between family risk variables and academic achievement for the middle group of children (10-13 years of age) was also examined. This group was excluded from the analysis of performance declines based on evidence suggesting that children within this age range may fluctuate considerably on measures of intellectual, academic, and affective functioning. For example, work by Bruner, Oliver, and Greenfield (1966) has suggested even an inversion in performance prior to the puberty years. This notion suggests that cognitive performance is transitioning and that new strategies are developing which are not only ineffective but perhaps interfere in the performance of complex cognitive tasks. In fact, this age jump did not show linearly continuous performance between Cohort 2 and Cohort 4 and interfered with the statistical examination of the data for the possible longitudinal implications of family risk status on children's developmental performance. In addition, McCall (1979) noted that such performance discontinuities are poorly noted in the literature and may be as important as research generally regards the search for continuities in the development of intellectual and cognitive skills. Soares and Soares (1969) also report that there is a significant change in self-concept at the 10-year-old mark, while Marjoribanks (1979) has reported on school children's disenchantment beginning at the fourth and fifth grade levels. The latter explanation relates to motivational factors, while the former discussion relates to cognitive changes and together offer an explanation for the discrepancy in performance among this age range compared to both the earlier and later stages.

A multivariate regression analysis was conducted with Cohort 3 using the eight risk variables and measures of children's intellectual functioning-verbal, intellectual functioning-performance, reading achievement discrepancy scores, and mathematics achievement discrepancy scores. Results of the analysis indicated that the set of family variables accounted for a substantial amount of the variance in intellectual functioning-verbal (30%), reading achievement discrepancy scores (39%), and mathematics achievement discrepancy scores (29%). The contribution of risk variables to the predictability of achievement discrepancy scores indicated the unique contribution of Occupational Status to both reading and mathematics discrepancy scores. Verbal Skills of the Primary Caregiver also uniquely contributed to the reading discrepancy scores. These results suggested that high occupational prestige of the main wage earner and a high verbal skill level of the primary caregiver, in combination with the other risk variables, was associated with a higher reading discrepancy score. Similarly, high Occupational Status was associated with high mathematics discrepancy scores. Consideration of the other risk variables suggested a possible interpretation of these findings. Achievement Orientation was the next most important contributor to reading scores, though not reaching statistical significance. However, high Achievement Orientation was associated with low reading discrepancy scores, suggesting perhaps that the family both modeled and encouraged high achievement striving. The extent to which parents were able to actively facilitate the development of children's reading skills may have been limited. These findings may also be interpreted as suggesting the heightened importance of the family in supporting the development of academic skills for children in later elementary and junior high school.

In summary, results from the analysis of each school-age cohort indicated that the set of family risk variables accounted for a sizable amount of the variance in reading and mathematics achievement grade discrepancies for children 6-19 years of age. The prepotency of family risk variables differed for each cohort, suggesting that the importance of certain risk variables, acting in concert with the other risk variables, was a function of the child's age. Thus, results supported the need to attend to both the total learning environment created by the family, and the specific aspects of the environment, depending upon the child's stage of development.

Limitations

The study of family learning environments and children's development challenges the researcher to mesh the elements of scientific inquiry with the activity of people living, working, playing, and learning. The methodology used in the present study incorporated the recommendations of previous field researchers and analysts: multiple methods of measurement were used; multiple visits were made to families; multiple aspects of the family and the child were assessed; multivariate methods of analysis were employed; the same set of family variables was examined for children of different ages; and so on. Nonetheless, the findings of the study are limited in a number of ways.

The very real constraints of time and money limited the number of families that participated. Additional families would have allowed for a larger study sample for examining the robustness of statistical relationships. A larger sample would also have allowed for a "hold-out" group for the cross validation of family risk variables and family environment-child performance relationships.

The constraints of voluntariness and confidentiality limited the study in interrelated ways. The voluntary nature of the study included a selection bias that suggests families who volunteered were different from families who did not volunteer. Voluntariness affected the study in a more fundamental way: the absence of random selection in the statistical analyses limited the inferences that could be drawn and the generalizability of results. Confidentiality of information placed constraints on the kind of information that was obtained on families once they had volunteered to participate. Compliance with confidentiality mandates resulted in a small number of home visits to families who did not meet the sample criteria, i.e., two or more children, at least one child receiving educational help, no evidence of organic pathology that could account for learning or behavior problems.

All forms of research are dependent upon the quality of their measuring devices. In the present study, instruments and interview items were developed, selected and/or adapted from the relatively few available instruments designed to assess multiple aspects of the family environment. The choice of instruments was further restricted by the requirement that the method and content be reasonably unobtrusive and within the realm of potential school outreach efforts. Although the psychometric characteristics of these instruments have been reported by others (see Appendix B), estimates of reliability and validity may vary depending upon the sample chosen for study (Rankin, 1981). For this reason, the study sample and the instruments used have been thoroughly described so that others can approximate similar conditions.

It is noteworthy that mothers were overwhelmingly considered the primary caregiver and also the parent most available for participating in the multiple home visits. Thus, many aspects of the family environment represented in the study were based on the mother's perceptions. Also, the use of interviewing and self-report techniques suggested the possible bias of socially desirability in responses, and a discrepancy between what has been said occurs and what actually occurs in the family environment. These conditions have been interpreted as follows: self-report measures provided an indication of the mother's awareness of and general tendency to behave a certain way relative to other mothers in the research group.

The ex post facto design of the study restricted, of course, the inferences that could be made about causation among the variables. The examination of the relationship between the family environment and children's performances did not disentangle genetic influences from "pure" environmental influences. As Marjoribanks (1972) and others have pointed out, the differentiation of these two influences would have required the study of children in which geontypes and children's environments were uncorrelated. It is possible that some of the variance in children's performance that was attributed to the family environment may have a genetic base. Future studies using the instruments from the present study may provide additional insight into the environment-genetics questions.

The eight family risk variables identified in the present study offer a starting point for more intense inquiry into the nature of family learning environments. If the goal is to make a difference in children's academic and social lives, it will be necessary to validate the family variables that have been associated with children's performances. The final proof of the effort will be tested through the use of small-scale, true experimental interventions.

Implications

No research study can fully capture the singular character of family life. Rather, the study of families offers only glimpses of reality, and seeks to identify the most useful and significant variables in describing that reality. The families who participated in the present study represented a range of income, educational level, and occupational level, and lived in either rural or residential areas of small Wisconsin towns. In almost all cases, children lived in two-parent homes, with the mother assuming the role of primary caregiver. All families had two or more children, with at least one child receiving some sort of educational assistance in addition to the regular school program. In effect, all families in the study were "at risk" for exacerbating the school-related difficulties being experienced by their children. Furthermore, the decline in measured intellectual functioning and academic achievement observed in the performance of younger as compared to older children suggested the at-risk nature of the total sample of families represented in the study.

To review, results of the present study indicated that multiple and interacting family environmental variables were associated with children's intellectual functioning, academic achievement, and affective functioning. Family environ[illegible] characterized as high-risk were related to lower levels of children's performance, as compared to the performance of children from low-risk family environments. Family risk variables, including both environmental setting and family process variables, were found to have important, albeit different, predictive relationships with children's school-relevant skills depending upon the child's stage of development. Thus, identifiable aspects of children's family environments appeared to be important factors in facilitating or impeding children's learning across their developmental life span.

The identification of salient family factors in children's skill attainment supports the development of a psychoeducational technology that addresses the needs and capabilities of schools, families, and children in maximizing learning and minimizing or preventing learning and behavior problems. Consequently, schools that see their role in a wider framework than the inculcating of skills and the purveying of information are in a position of great influence. What follows is a discussion of some of the potential roles of the school in implementing a family-focused psychoeducational technology.

Screening and Assessment

In the United States, most school districts conduct kindergarten screening programs to identify young children who do not have the necessary entry skills for kindergarten. Typically, the school then suggests possible remedial action, e.g., summer preschool program, later school entry, and/or further assessment of child functioning. The importance of screening efforts is also evident in the enabling legislation for the Early and Periodic Screening, Diagnosis, and Treatment Program (EPSDT). A major service component of EPSDT is to identify persons "at risk" for developing a handicapping condition. As Bradley and Caldwell (1978) and others have noted, the success in identifying young children with developmental problems has been limited. Ineffective screening efforts may be based in part on the lack of predictive validity of most screening instruments (Gallagher & Bradley, 1972). Results of the present study suggested that [illegible] inclusion of family environmental variables may enhance the effects of screening for at-risk conditions by addressing critical variables in the child's family learning environment.

Similar arguments can be used to support the inclusion of family conditions and processes in the assessment of children's learning and behavior problems. Assessment of children's special educational needs typically does not include assessment of the child's needs within the context of family functioning, i.e., assessment of the family learning environment is not conducted in any systematic, comprehensive manner. Assessment of both family and child needs may more accurately suggest the scope and direction of intervention efforts.

Family Outreach

Historically, communities and families have been more involved in the education of their children that is currently the case (Berger 1981). The past ten years have witnessed an increase in parent involvement, particularly in the area of special education, but the roles available for parents have been relatively limited (Paul, 1981; Rutherford & Edgar, 1979). These limitations seem to be at least partly due to a minimal understanding of parents' needs, skills, and interests in actively supporting their children's educational programs. By addressing the needs and capabilities of both families and children, the school is in a position to enhance the effectiveness of its educational programs by identifying (a) those families who need and will be receptive to family outreach efforts initiated by the school; (b) those families who need assistance but who will not accept outreach at the present time; and (c) those families who seem interested and adept at supporting their children's school program, and thus not in need of assistance.

The family risk variables identified in the present study may initially suggest important aspects of the family environment deserving attention with regard to children's school problems. Further examination of family conditions and processes may suggest the need for an individually tailored family outreach program. A number of authors have provided strategies and techniques for effecting change in families across a wide range of needs (Bergen & Duley, 1981; Berger, 1981; Paul, 1981; Robinson, 1980; Rutherford & Edgar, 1979). This is not to imply that the school is solely responsible for development and implementation of family outreach programs. The school is, however, the only stable institution that has a longitudinal relationship with children and families. Teachers and administrators are in a position to know and understand the transient and long-term needs of children and families, and through some coordinating mechanism, to develop programs in cooperation with other community programs and agencies. In this manner, the school acts as a "lead agency" in coordinating and monitoring services to meet a range of family needs, and as a resource when the needs of families seem to be interfering with children's ability to benefit from school programs.

Compensatory Educational Programming

Increased understanding of family and child needs and capabilities is likely to suggest that some families will not be receptive to outreach efforts or responsive to outreach programs. A few researchers have noted parent perceptions that seem to reduce parent involvement: perceptions of themselves as having an inferior role in their child's education; perceived separation of home and school; perceived mismatch between what parents need and what programs offer; and little belief in the potential effectiveness of the program (Karnes, 1969; Patterson, Reid, Jones, & Conger, 1975; Perske, 1983). Other researchers have noted that the effectiveness of parent programs varied and in some cases, the program was not at all effective (Clarke & Clarke, 1972; Patterson et al., 1975; Walter & Gilmore, 1973).

In families where needed outreach efforts are inappropriate or ineffective, the suggested role of the school is one of compensation. As Pringle (1975) described:

> He [the teacher] can counteract, or at least mitigate, some of the consequences of an emotionally or culturally unfavorable home background; he can rekindle the child's curiosity, harness his emotional energies by giving him praise and recognition, and compensate him for emotional deprivation by offering affection, albeit of a less "exclusive" and close nature than parental love (p. 78).

This attitude of effecting positive change clearly requires a school administration that takes a wider view of the teacher's role, and actively communicates and supports this role in administrative decisions, e.g., smaller class size, release time for a teacher interested in developing a stronger relationship with the child, hiring a family outreach coordinator. Meeting the needs of the child through such things as peer-tutoring, membership in a smaller class, or modified homework assignments, require teaching flexibility and administrative support.

The school is in a position to move beyond accepting categorical placement (e.g., Educable Mentally Retarded, Emotionally Disturbed, Learning Disabled, etc.) as an all-inclusive panacea, or simply regarding the child as "another one of the kids from that family," unable to make significant academic or social gains. This shift lies in recognizing the interrelatedness of the child's school and family lives, reaching out to parents, and when possible, effecting positive change.

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FINAL REPORT

PART II

APPENDICES

DIFFERENTIATING PSYCHOSOCIAL RISK AS A MEANS OF INDIVIDUALIZING PROGRAMS FOR HANDICAPPED CHILDREN AND THEIR FAMILIES

GRANT NO. G008101030
DEPARTMENT OF EDUCATION
WASHINGTON, D.C.

FINAL REPORT

DIFFERENTIATING PSYCHOSOCIAL RISK AS A MEANS OF INDIVIDUALIZING PROGRAMS FOR HANDICAPPED CHILDREN AND THEIR FAMILIES

was submitted to the
University of Wisconsin-Madison
under the title:

THE RELATIONSHIP BETWEEN FAMILY VARIABLES AND CHILDREN'S DEVELOPMENTAL PERFORMANCE

by

Pamela S. Maykut
December, 1983

This project was prepared pursuant to Grant No. G008101030 from the U. S. Department of Education. Grantees undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinion do not, therefore, necessarily represent Department of Education position or policy.

APPENDIX A:

PARENTAL PERMISSION AND RELEASE FORM

Re: ____

Names of Children

As part of the University of Wisconsin family project, we would like to learn more about your children. To do this, we will need to do individual interviews and some testing. This will include questions about children's feelings about themselves and others (Self-Observation Scale, Nowicki Scale); short reading and math tests (Woodcock-Johnson Subtests); and problem-solving and other intellectual tasks (Matching Familiar Figures, Peabody Test, Wechsler Scale). We would also like to review children's school files and do vision and hearing checks if this information is unavailbale.

In order to do this, we will need your written consent. We would appreciate your signing this letter which will be retained in the school files.

Thank you for your cooperation.

____

_____I/We give my/our consent to proceed with the interviewing and testing.

_____I/We do not give my/our consent to proceed with interviewing and testing.

________________________________ ________________

Parent Signature Date

APPENDIX B:

PSYCHOMETRIC CHARACTERISTICS OF SELECTED FAMILY ASSESSMENT INSTRUMENTS

TITLE: Home Observation for Measurement of the Environment (1978)*

AUTHORS: B. M. Caldwell and R. H. Bradley

PUBLISHER: University of Arkansas at Little Rock, Little Rock, Arkansas

AGE RANGE: Families of children age 3-6 years

TIME REQUIRED: One hour interview/observational visit and approximately 15 minutes to complete the inventory

DESCRIPTION: The Home Observation for Measurement of the Environment (HOME) was designed to describe the quality of the home environment available to a young child. The HOME is composed of six subscales: emotional and verbal responsivity of the mother, avoidance of restriction and punishment, organization of physical and temporary environment, provision of appropriate play materials, maternal involvement with children, and opportunities for variety in daily stimulation. Although the six subscales of the HOME are not totally independent, factor analytic procedures were employed as a means of clustering the 45 items. Each item receives a binary score--yes or no--and no attempt is made to rate finer gradations. Interviewers respond to each item on the basis of their impressions from a one hour home visit with the parent and child. The HOME Manual provides detailed instructions on conducting the home visit. An experimental elementary version of the HOME is available for use in research studies.

STANDARDIZATION: The HOME has gone through two major revisions. At each stage of development, the authors report enlisting the participation of families from different occupation and income groups. The HOME Manual provides means and standard deviations for HOME subscale scores for families with preschool age children.

RELIABILITY: Internal consistencies for the HOME subscales, using Kuder-Richardson Formula 20, range from .53 to .93. Stability coefficients for the subscales, measured at 3 years and 4½ years, range from .05 to .70. The authors have suggested that variability in stability scores may reflect the changing nature of parent-child interactions with increasing age. The internal consistency coefficient of the elementary HOME, physical environment subscale, was reported to be .80 (Bradley, personal communication).

VALIDITY: Construct Validity: Ramey et al. (1975) reported that the HOME successfully discriminated between "normal" homes and homes "at risk" for developmental retardation. Fowler and Swenson (1975) found that 30-month and 48-month scores on the Griffiths scale were moderately correlated with HOME scores, as were 30-month Bayley IRB scores. Cravioto and DeLicardie (1972) reported that clinical malnutrition at 4 years of age was associated with low HOME scores at 6 months of age. Wulbert et al. (1975) found

**Post-interview observation form, p. 17.*

that children who were language-delayed but of normal intelligence came from homes having lower HOME scores than did normal children or children with Down's Syndrome. Hamilton (1972) reported that mothers who had participated in a family and child focused intervention program showed a 15-point increase in HOME scores after 6 months of involvement. Predictive Validity: HOME subscale scores have been reported as more predictive for developmental scores than Apgar or prematurity ratings (Hayes, 1977). Studies conducted at the Center for Child Development and Education in Little Rock, Arkansas, have supported the predictive validity of the HOME. HOME scores obtained in the first year of life were significantly related to both 6-month and 12-month Bayley MDI scores. HOME scores also showed moderate to strong correlations with 36-month Binet performance, 54-month Binet performance, and 37-month scores on the ITPA. Discriminant functions composed of HOME subscale scores were also successfully used to designate those infants who increased in mental test performance, those who remained stable, and those who decreased. Jordan (1976) examined the relationship between HOME scores and mothers with at least a high school education and five or fewer children. He reported that the HOME accounted for a significant amount of the variance in performance on the Raven's Colored Progressive Matrices.

COMMENT: The psychometric characteristics of the HOME support its usefulness in describing certain aspects of family home environments. The instrument itself is short and relatively easy to complete. The elementary version of the HOME would appear to be a useful tool for assessing the home environments of older children.

TITLE: Home Quality Rating Scale (1977)*

AUTHORS: C. E. Meyers, I. Mink, and K. Nihira

PUBLISHER: Neuropsychiatric Institute - Pacific State Research Group, Pomona, California

AGE RANGE: Families of mentally retarded children

TIME REQUIRED: Two hour interview/observational visit and approximately 15 minutes to complete ratings

DESCRIPTION: The Home Quality Rating Scale (HQRS) was designed to assess the multiple dimensions of the family environment of mentally retarded children. The HQRS is made up to 32 items to be completed by an interviewer after approximately a 2-hour visit to the home. Most items are rated on a 1 through 5 or 1 through 4 scale. Specific instructions are included for converting nominal scale items and items which are "not applicable" or "unable to tell" responses. Factor analysis of the scale revealed five factors: harmony and quality of parenting, concordance in support of child care, openness and awareness of disability, quality of the residential environment, and quality of the residential area.

STANDARDIZATION: The current form of the HQRS resulted from various experimental tryouts and from analysis of the data from the first 2 years of a 4 year longitudinal study. Subjects in this on-going study are families with children in classes for the educable mentally retarded (EMR) or trainable mentally retarded (TMR). One hundred forty-six families with a TMR child and 231 families with an EMR child were involved in the development of the HQRS and in the factor analysis. The five factors of the HQRS obtained through factor analyses were substantially the same for both the TMR and the EMR groups.

RELIABILITY: Authors reported the internal consistency reliabilities of the factor scores estimated by Chronbach's alpha:

Factor	TMR	EMR
Harmony and quality of parenting	.825	.861
Concordance in support of child care	.780	.775
Openness and awareness of disability	.759	.637
Quality of the residential environment	.705	.845
Quality of the residential area	.561	.477

VALIDITY: Construct Validity: In conducting their study of EMR and TMR families, Meyers and associates have combined two other family environment measures with the HQRS: the Henderson

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**Post-Interview Observation Form, pp. 1-14.*

Environmental Learning Process Scale (HELPS) (Henderson, Bergess, & Hunt, 1972) and the Family Environment Scale (FES) (Moos & Moos, 1981). The HQRS, HELPS, and FES factors were used to conduct a cluster analysis of EMR and TMR family environments. Factors of the HQRS combined with the other instrument factors to reveal seven distinct types of families for EMR children and five distinct types of families for TMR children. Three family types were similar for both groups and were described as (a) families who were cohesive, harmonious, and child centered; (b) families who were disadvantaged, low in morale, and had little concern for the child; and (c) families who did not disclose much about themselves and who were unharmonious. Factors of the HQRS were consistently important descriptors of both EMR and TMR groups. Criterion Validity: Ethnographic studies were also conducted with a sample of these EMR and TMR families. A number of family and child characteristics supported the validity of the family clusters. For example, cohesive, harmonious families were more likely to have children who received more attention from parents and were freer from emotional problems in school. Disadvantaged, low morale families were more likely to have children who had adjustment problems in school and a family lifestyle that was somewhat passive and isolate. Low-disclosure, unharmonious families tended to have more stressful life events and to negatively perceive their child's handicap.

COMMENT: The HQRS appears to be carefully constructed, with attention to aspects of the family environment that are not addressed in instruments such as the HELPS or FES. The content and format of HQRS items lend themselves to adoption for studying the families of nonhandicapped children.

TITLE: Henderson Environmental Learning Process Scale (1972)*

AUTHORS: R. W. Henderson, J. R. Bergen, and M. Hunt, Jr.

PUBLISHER: R. W. Henderson, Teacher Education, University of California, Santa Cruze, Santa Cruze, California

AGE RANGE: Families with young children, although modifications of the scale are recommended for families with older children

DESCRIPTION: The Henderson Environmental Learning Process Scale (HELPS) is an interview schedule designed to provide measures of educationally relevant variables in the home that would be subject to change through intervention programs in the school and in the home. The HELPS is composed of 55 items and the continuum for each item is scored 1 through 5 (5 representing a response at the end of the scale indicating the greatest amount of experience, exposure to learning situations, etc.). The score for each home environment is the sum of the scores for all items. The instrument can be self-administered or completed by the respondent with assistance from the interviewer (e.g., reads each item aloud). Factor analysis of the HELPS has revealed five factors: extended interests and community involvement, valuing language and school related behavior, intellectual guidance, providing a supportive environment for learning and attention.

STANDARDIZATION: The HELPS was developed on a sample of 60 lower SES Mexican-American families and 66 middle SES Anglo-American families, each family having at least one child in the first grade. Families were drawn from three public schools in Tucson, Arizona.

RELIABILITY: Veldman's TESTAT (1967) program was used to determine the internal characteristics of item-total correlations. The 35 items having the highest correlations with total test score were selected as the final items for the HELPS. The raw scores of subjects on these items were adjusted to remove response bias, using Bergen's (1968) bias adjustment procedure (i.e., minimize bias affecting the mean and variability in subject's responses). A subject's mean on the response bias adjustment scale was subtracted from each of his item responses on the HELPS in order to remove constant errors, such as the tendency to overestimate a response in a socially desirable direction. The resultant score for each item was divided by the standard deviation computed for the subject's responses on the bias adjustment scale in order to remove bias affecting the variability of responses. Factor analysis of the HELPS was conducted on the adjusted scores of the standardization sample.

VALIDITY: Concurrent Validity: Henderson and associates compared the factor structure of the HELPS items to the factor structure of the HELPS items when SES and ethnic group membership were included among the items in the analysis. The resulting factor structures were quite similar, suggesting that the HELPS was measuring home environmental factors that were important across different SES and ethnic groups. Predictive Validity: The authors also examined the relationship between HELPS factor scores and children's performance on the Stanford Early Achievement Test (SEAT) and the Boehm Test of Basic Concepts (BTBC). Stepwise regression analyses indicated that two HELPS factors, valuing language and school related behavior and providing a supportive environment for school learning, accounted for a majority of the variance in all of the analyses conducted.

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*Parent Answer Booklet, pp. 1-4.

COMMENT: Although there is support for the usefullness of the HELPS, the reliability information is somewhat limited. The items and format of the scale appear to be quite adaptable to families of school-age children, and modifications and improvements on the scale are encouraged by the authors (Henderson, personal communication).

TITLE: Parental Modernity in Childrearing and Educational Attitudes and Beliefs (1981)*

AUTHORS: E. S. Schaefer and M. Edgerton

PUBLISHER: E. S. Schaefer and M. Edgerton, Frank Porter Graham Child Development Center, Chapel Hill, North Carolina

AGE RANGE: Families with kindergarten and older school-age children

DESCRIPTION: The Parental Modernity in Childrearing and Educational Attitudes and Beliefs Scale (PMS) was designed to assess parents' individual modernity in their approaches to raising and educating children. Schaefer and Edgerton's (1977) earlier work with their Parent as Educator Interview suggested the usefulness of examining (a) progressive versus traditional educational beliefs and (b) self-directing versus conforming values for children. The PMS is available in two forms, a general form and a parent form. Each form consists of 15 statements that require a response of "strongly disagree" to "strongly agree." Respondents are to circle the number that indicates they agree or disagree with each statement on childrearing and education.

STANDARDIZATION: Three samples were involved in the development of the PMS. Sample A consisted of 98 black and 77 white mothers and children randomly selected from 28 kindergarten classrooms in eight rural, suburban, and urban schools. Sample B consisted of 55 black, low SES mothers and their children who had been selected during infancy as at high risk for later school failure. Sample B also included 33 white mothers and children randomly selected from the same classrooms from a predominantly higher SES community. Sample C included 40 white and nine black normal older school age siblings of a sample of young normal and handicapped children and their mothers and fathers. The 99 items of the Parent as Educator Interview were administered during the fall and spring of the kindergarten year to mothers of Sample A, and during the kindergarten year to mothers of Sample B. Sample C mothers and fathers completed a self-administered version of the Parent as Educator Interview. The PMS general and parent form were developed independently for Samples A and B from scales of the Parent as Educator Interview. Items were selected based on the significance of their correlation with children's mental test scores and teacher ratings. Reliability estimates were computed for Sample A. Internal consistency reliability computed with Cronbach's alpha was .88. Split half reliability (Spearman-Brown correction) computed by comparing the general form with the parent form and yielded a correlation of .90. Scores from Scales A and B yielded a correlation of .91. Test-retest reliability from fall to spring was .84.

VALIDITY: Construct Validity: Children in the standardization sample were administered the WPPSI (Sample A) and WPPSI and PIAT (Sample B). Teachers of children in all three samples completed

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**Family Interview Booklet, pp. 29-30.*

the Classroom Behavior Inventory (CBI) for children in their classes. To examine the validity of the PMS in relation to intelligence, the scale developed on Sample A was cross-validated on Sample B and vice versa. A combined AB scale developed from items contained in Scales A and B was cross-validated for Sample C. Significant correlations were obtained between the PMS scale and the teacher's rating of the child's verbal intelligence for total samples, separate black and white samples, and for mothers and fathers. Significant correlations were also obtained between the PMS and children's mental test scores. The PMS was significantly positively correlated with CBI scales of curiosity/creativity, independence, and task orientation, and negatively correlated with CBI scales of dependency and distractibility.

COMMENT: The PMS appears to be a highly reliable instrument for assessing parental beliefs and attitudes that may relate to children's academic and social competence. The PMS is a brief, easy to administer tool with items that seem appropriate for families with school-age as well as preschool-age children.

TITLE: Family Environment Scale (1981)*

AUTHORS: R. H. Moos and B. S. Moos

PUBLISHERS: Consulting Psychologists Press, Palo Alto, California

AGE RANGE: Manual does not give an age range. Studies using the scale indicate that it is useful with family members 12 years of age and older.

DESCRIPTION: The Family Environment Scale (FES) was developed to assess the social climates of families, including directions of personal relationships, directions of personal growth, and basic organizational structure. The FES is a self-report inventory with a true/false response format. Form R has 90 items forming 10 subscales: cohesion, independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation, moral-religious emphasis, organization, expressiveness, conflict, and control. The short form of the FES (Form S) was developed to permit rapid assessment of either large families and/or groups of families. Form S is comprised of 40 items from Form R, with four items from each subscale. A score is obtained for each subscale by adding up the number of items on the subscale that have been answered in the scored direction. An average score is then calculated for all the members of each family and family profiles are generated by comparing these subscale averages with the normative sample. A Family Incongruence Score can be derived by (a) comparing the 10 subscale scores of each possible pair of family members, (b) obtaining the difference between each pair for each of the 10 subscale scores, (c) summing these differences over the 10 subscales, (d) using the resulting score as a measure of the extent to which each pair of family members disagree about their family climate, (e) obtaining an incongruence score for each possible combination of two family members, and (f) calculating the average of these incongruence scores to yield a Family Incongruence Score (Moos & Moos, 1981).

STANDARDIZATION: The FES standardization population included three family samples: (a) families recruited from church groups, from a newspaper advertisement, and through high school students; (b) black and Mexican-American families recruited from these groups as well as from black and Mexican-American research assistants; and (c) "clinic" families from a psychiatrically-oriented family clinic and a probation and parole department. The manual provides normative data from 285 families representing a wide range of family size and socioeconomic status groups. Short Form norms are also included.

RELIABILITY: Internal consistencies for the subscales, using Kuder-Richardson Formula 20, range from .64 to .79. The item-to-

**Parent Answer Booklet, pp. 13-14.*

subscale correlations vary from .45 to .58. The test-retest reliabilities of individual scores on the 10 subscales were calculated on 47 family members in nine families who took the FES twice with an 8 week interval between testings. The test-retest subscale reliabilities range from .68 to .86 (Moos & Moos, 1981). FES Short Form: The similarity of profiles obtained using only four items from each subscale was investigated by calculating intraclass profile correlations between 10 Form R and 10 Form S standard scores for a sample of 11 families, each family having five or more members. Ten of these correlations were above .90 and the other was above .80. Preliminary data indicate that the use of Form S results in a family profile that is highly similar to that obtained using Form R.

VALIDITY: Concurrent Validity: Moos and Moos (1981) report that studies have shown that the three broad FES dimensions (relationship, personal growth or goal orientation, and system maintenance and system change) are useful in characterizing the social and organizational climates of families. Other investigators have found conceptually similar dimensions using other types of assessment devices (Nowicki & Schneewind, 1977; Ollendick, LaBerteaux, & Horne, 1978; Walberg, 1976). Construct Validity: Moos (1974) compared 42 clinic families and 42 "normal" families matched on family size and composition. The clinic families obtained significantly lower scores on cohesion, intellectual-cultural orientation, and active-recreational orientation, and obtained higher scores on both conflict and control. Clinic families also obtained lower scores on expressiveness and independence and higher scores on achievement orientation. Clinic families obtained higher Family Incongruence Scores than the normal families. The FES was administered to 122 families in which one family member had been treated in a residential alcoholism program. FES data were obtained 6 to 9 months after the patients were discharged from the program. Mean scores of the alcoholic families closely resembled those of the normative sample on seven of the 10 FES dimensions. Conflict, intellectual-cultural, and active-recreational orientation subscales received less emphasis in the alcoholic families, with differences still remaining 24 months posttreatment. Researchers reported results for conflict were consistent with the notion that families of recovered alcoholics are careful to avoid conflicts and tension for fear of triggering renewed drinking (Bromet & Moos, 1977; Moos, Bromet, Tsu, & Moos, 1979). Scoresy and Christiansen (1976) compared FES scores of families receiving counseling and "nonclinic" families. Families seeking help scored significantly lower on the cohesion, expressiveness, and organization subscales, whereas they scored significantly higher on the conflict subscale. Draper (1977) administered the FES to families whose children experienced no academic problems, families whose children experienced academic problems, and families in which there was at least one academically successful child and one academically troubled child. The academically troubled group was higher in conflict than the other two groups and lower in intellectual-cultural orientation than the academically successful group. Janes and Hesselbrock

(1976) obtained FES results that showed that children of schizophrenic parents rated their families significantly lower than children of normal parents on two subscales, intellectual-cultural and active-recreational orientation. These same researchers also examined the relationship between the FES and children's school behavior. Teenagers who perceived their families as stressing independent thought and action were more likely to be rated by teachers (Hahnemann High School Behavior Rating Scale) as higher in reasoning ability, originality, verbal interaction, and intellectual independence, as having better work habits, and as demonstrating less anxiety than other children. Additional research indicates FES differences for families who receive various human services (e.g., residential treatment programs for their children) and for families who do not require special services (Kraft, 1977; Malin, 1978; Penk, Robinowitz, & Kidd, 1976; Pringle, 1976; Steinbock, 1977). Predictive Validity: The FES has been used in the examination of family environment and outcome of various training and treatment programs. Ford, Bashford, and White (1979) found clients with different types of pretreatment characteristics (e.g., FES cohesion and expressiveness) tended to benefit differentially from different types of marital communication training. Finney, Moos, and Mewburn (1979) found more positive FES scores were linked to better outcome for alcoholic treatment patients. A number of studies report that the FES is sensitive to changes in the family environment as a result of family treatment programs (Badger, 1976; Christiensen, 1977; Druckman, 1978; Geffen & Lange, 1978; Rosenthal, 1975).

COMMENT: Considerable support is evident for use of the FES for both clinical and research purposes. There is strong support for its use in all phases of family therapy: diagnosis, on-going assessment, and follow-up (Eichel, 1978; Fuhr, Moos, & Dishotsky, 1978; Waters, 1980). Similarly, the FES is applicable for exploring the hypotheses of the proposed study, particularly as it suggests differences in family processes as they relate to child performance. The FES (Short Form) is brief, has acceptable reliability, and can be administered by paraprofessionals.

TITLE: Nowicki-Strickland Locus of Control Scale (1973)*

AUTHORS: S. Nowicki and B. R. Strickland

PUBLISHER: American Psychological Association, Arlington, Virginia

AGE RANGE: Grades 3-12

DESCRIPTION: The Nowicki-Strickland Locus of Control Scale (NSLC) is a paper-and-pencil measure consisting of 40 questions that are answered either yes or no. The items describe reinforcement situations across interpersonal and motivational areas such as affiliation, achievement, and dependency. The scale yields a score for responses reflecting an internal (I^+) locus of control and a score for responses representing external control (I^-). The NSLC can be administered on an individual or group basis, accompanied by the oral presentation of items. A preschool version of the NSLC is also available (Nowicki & Duke, 1973). Line drawings illustrating items of the scale are used to aid young children's understanding.

STANDARDIZATION: The NSLC was standardized on a sample of 1017 children ranging from the third through the twelfth grade. Children were mostly Caucasian elementary and high school students from four different communities. All schools were in a county bordering a large metropolitan school system. Socioeconomic data obtained from school records and indicated that all socioeconomic status groups (Hollingshead Index, 1957) were well represented except the highest group. Intelligence test scores for males and females in grades 3-10 ranged from means of 101 to 106 as measured by Otis-Lennon scales, with no significant differences across groups. Normative data for the standardization population appears in Nowicki and Strickland (1973).

RELIABILITY: Authors report split-half reliability estimates of internal consistency, corrected by the Spearman-Brown formula, were .63 (for grades 3, 4, 5), .74 (for grades 9, 10, 11), and .81 (for grade 12). Test-retest reliabilities sampled at three grade levels, 6 weeks apart, were .63 for the third grade, .66 for the seventh grade, and .71 for the tenth grade.

VALIDITY: **Concurrent Validity:** Authors compared NSLC scores to scores from the Intellectual Achievement Responsibility Scale (Crandall, Katkovsky, & Crandall, 1965) for a sample of black third (N=182) and seventh graders (N=171). Results revealed significant correlations with the I^+ but not the I^- scores (for the third grade, .31, $p < .01$; for the seventh grade, .51, $p < .01$). Authors also compared the NSLC with the Bialer-Cromwell Locus of Control Scale (Bialer, 1961). Significant correlations (.41, $p < .05$) were obtained for a sample of white children (N=29) aged

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**Parent Answer Booklet, pp. 10-11.*

9-11. The Rotter Internal-External Locus of Control Scale (Rotter, 1966) was also found to correlate with the NSLC adult scales (NSLC items for "kids" changed to "people" and items about parents deleted) in two studies with college students ($N=76$, $r=.61$, $p < .01$; $N=46$, $r=.38$, $p < .01$). A number of investigations revealed significant relationships between NSLC scores and measures of achievement (Nowicki, 1971; Nowicki & Roundtree, 1973; Nowicki & Strickland, 1973; Rotter, 1971), delay of gratification (Strickland, 1971, 1972), involvement in extracurricular activities and popularity (Nowicki, 1971; Nowicki & Barnes, 1971; Nowicki & Roundtree, 1971), and prejudice against black children by white children (Duke & Nowicki, 1971).

COMMENT: The psychometric characteristics of the NSLC seem to be comparable to other similar instruments and in some cases have improved on the shortcomings of other tools. The standardization population is appropriate for the purposes of the proposed study. The NSLC allows for group administration, decreasing the amount of time needed for individual assessment.

TITLE: Peabody Picture Vocabulary Test-Revised (1981)*

AUTHORS: L. M. Dunn and L. M. Dunn

PUBLISHER: American Guidance Service, Circle Pines, Minnesota

AGE RANGE: 2 1/2 years through adult

DESCRIPTION: The Peabody Picture Vocabulary Test-Revised (PPVT-R) is a nonverbal, multiple choice test designed to evaluate the receptive vocabulary skills of children and adults. The examinee must have adequate hearing and be able to indicate "yes" or "no" in some manner. The recent revision of the original PPVT (Dunn, 1959) contains greater range and balance of grammatical word categories and efforts have been made to eliminate words that are culturally, regionally, sexually, or ratically biased. The PPVT-R has two forms, L and M, with 175 picture plates in each form. Each plate contains four pictures and plates are arranged in increasing levels of difficulty. Practice items precede test items and for each, the examinee is instructed to "point to," "show me," find," or somehow indicate the picture that best tells the meaning of the word.

STANDARDIZATION: The PPVT-R was normed on a representative sample of 4,200 children, ages 2 1/2 through 18 years, and 828 adults, ages 19 through 40 years, based on the 170 U.S. Census data. Equal numbers of male and female children were grouped into half-year intervals from ages 2-6 to 6-11 and at one-year intervals from ages 7 through 18 years. The sample was stratified on sex, geographic region, occupation of major wage earner, race, and community size. In the adult sample, four age groups were used: 19-24, 25-29, 30-34, and 35-40. The sample was stratified by age, sex, and occupation.

RELIABILITY: Split-half reliability coefficients for ages 2-6 through 18-0 range from .61 to .88. For the adult sample, the median split-half reliability coefficient was .82. For all groups, the median standard error of measurement is 7 points. Alternative form reliabilities for a sample of 642 children ranged from .74 to .89 for the standard scores. In a sample of 962 children given Forms L and M within 9 to 31 days, alternate-form reliabilities ranged from .50 to .89 (median of .76) for the standard scores.

VALIDITY: No validity studies are yet available on the PPVT-R. Similarities between the revised and original test suggest the usefulness of PPVT validity information. Equivalence of Form A of the PPVT and Form L of the PPVT-R was studied on a sample of 1,709 children, ages 3-16 years. Correlations of standard scores ranged from .50 to .85 across the age ranges. **Concurrent Validity:** The PPVT has most often been compared to standardized intelligence tests, since these measures typically contain some measure of vocabulary and vocabulary subtests have been found to be the single best indicator of full scale measured intelligence. Sattler (1982) reported that the PPVT correlations with intelligence measure range from .20 to .90, with median correlations in the .60's. Correlations between the PPVT and achievement measures range from .00 to .90, with median correlations in the .40's. Correlations between the PPVT and other measures of vocabulary range from .50 (Pacific Picture Vocabulary Test) to .89 (Expressive One-Word Vocabulary Test). **Predictive Validity:** Evidence of the PPVT's predictive validity over one month or longer indicate it correlates moderately with the Wide Range Achievement Test (median, .24-.29), California Achievement Test (median, .40 to .62), and Metropolitan Achievement Test (median, .42).

**Family Interview Booklet, p. 57-59.*

COMMENT: The PPVT-R appears to be an improvement over the PPVT, particularly with regard to standardization. The PPVT is a widely used measure of receptive vocabulary and both the PPVT and PPVT-R are applicable for testing individuals from younger to older ages.

TITLE: Reading/Everyday Activities in life (1978)*

AUTHOR: M. Lichtman

PUBLISHER: Westwood Press, New York, New York

AGE RANGE: Approximately 10 years of age or older

DESCRIPTION: Reading/Everyday Activities in Life (R/EAL) was designed to assess the functional literacy of individuals. The content of R/EAL is based on the concept that functional literacy relates directly to reading experiences encountered in daily living. The test is made up of nine subtests selected as representative of a number of general categories of common printed material. The categories include: signs and labels; schedules and tables; sets of directions; high-interest, factual narrative; illustrated advertisements; technical documents; maps; categorized listings and indices; and fill-in-blank form. R/EAL consists of nine reading selections chosen to represent each of these categories. The respondent is asked to read each selection and answer five questions for each which are based on a task analysis of the functions required to deal with each selection. R/EAL can be self-administered, self-directed, and self-paced by audio input (instructions on cassette tape) or administered orally by the examiner.

STANDARDIZATION: R/EAL was developed on a sample of 434 individuals ranging from 16 to 21 years of age. One hundred sixty-nine males and 265 females comprised the sample. Subjects were enrolled in a job training program designed for low income individuals, most of whom had not completed high school. Blacks, Spanish-surnamed, and rural whites comprise the majority of the sample. Subjects had completed an average of 9 years of high school and had a reading grade equivalent on the Stanford Achievement Test of 5.2.

RELIABILITY: Internal estimates of reliability were computed for the standardization sample. Using Kuder-Richardson Formula 20, the internal consistency coefficient was .93.

VALIDITY: Concurrent Validity: The author reported on the relationship between R/EAL and the Stanford Achievement Test for the 434 subjects in the standardization sample. The Pearson product moment correlation between the two tests was .74 and the standard error of measurement was 5.28. Content Validity: Lichtman also reported on the extent to which the behaviors sampled in R/EAL were representative of the universe of behaviors defining functional literacy. To accomplish this goal, each question used in R/EAL was selected directly from a task analysis (detailed in the manual) of behaviors required to complete the questions for each reading selection.

COMMENT: R/EAL appears to be particularly useful for ethnic and minority groups who traditionally have been singled out by the

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**Family Interview Booklet, p. 73.*

bias of standardized reading achievement tests. By allowing for self-testing, R/EAL attempts to eliminate examiner bias and negative examiner reactions. This format may also increase motivation by giving the subject control over the testing situation. This characteristic of R/EAL is particularly important for the present study since parents are typically asked to complete a reading test in their own home or elsewhere.

TITLE: Matching Familiar Figures Test (1965)*

AUTHOR: J. Kagan

PUBLISHER: J. Kagan, Harvard University, Cambridge, Massachusetts

AGE RANGE: School age or older

DESCRIPTION: The Matching Familiar Figures Test (MFFT) was designed as a measurement of reflection-impulsivity in cognitive problem-solving. The MFFT is a match-to-sample task consisting of a standard ink drawing of a figure (e.g., tree, house, boat, telephone), accompanied by an array of six very similar drawings, one of which is an exact copy of the standard. The other five drawings differ from the standard in a single, unique, and identifiable detail. There are two practice items and twelve test items in the standard MFFT. Impulsive individuals are conventionally defined as those scoring below the sample median in mean latency to first response and above the sample median in total errors.

STANDARDIZATION: The MFFT was developed for use in experimental studies of children's reflective or impulsive on cognitive problem-solving tasks. Kagan and his associates examined the MFFT performance of children in grades 1 through 4. Other researchers have reported the MFFT performance of children in preschool and kindergarten (Harrison & Nadelman, 1972; Lewis, Rausch, Goldberg, & Dodd, 1968; Ward, 1968). In an effort to develop normative data on the MFFT, Salkind and his associates have examined the MFFT performance of large groups of children (Salkind, 1978). The norming population consisted of 8,172 children from studies conducted by 97 different researchers. In the total population, 97 percent of the children have been described as "normal," 96.8 percent as middle class, with a breakdown by sex of 53 percent males and 47 percent females. The range of age groups was from 3 to 85 years with the majority of the population falling within the 5- to 12-year-old range (± 6 months). From this total population, data for the norm tables were included for children ranging in age from 5 to 12 years who were described as normal and middle class. Each age group within the norming sample contained at least 100 children of each sex. The final data pool consisted of 2,846 administrations of the MFFT. Salkind (1978) presents means and standard deviations for errors and latency by age and sex for the norming sample.

RELIABILITY: Numerous studies have been conducted with the MFFT. In general, there is considerable support for the reliability of response latency and errors up to 2 1/2 years for children in grades 1 through 4. Stability correlations for latency range from .43 to .73. The correlation between latency and error, over time, ranged from -.40 to -.69. Block, Block, and Harrington (1974) reported internal consistency relaibility for MFFT, latency, .89, and errors, .62.

VALIDITY: Concurrent Validity: Kagan and Associates have compared children's MFFT performance with their scores on other measures of "conceptual tempo," a term used to describe the reflective-impulsive dimension of cognitive style. Error score correlations between the MFFT and the Design Recall Test, and the MFFT and the Haptic Visual matching Test range from .33 to .52 (p .01). Correlations for response latency between the MFFT and these measures range from .48 to .82 (p .01). Significant correlations have also been found between the MFFT and those other tests containing response uncertainty. Picture Completion Reasoning Test, Extrapolation Reasoning Test, and Inductive Reasoning Test.

Family Interview Booklet, pp. 79-85.

Construct Validity: An indicator of validity of the MFFT is the degree to which children display a tendency to choose between speed and accuracy as a matter of strategic choice. This trade-off strategic is reflected in the magnitude of the negative correlation between speed and accuracy. For school-age children, the correlations between latency (speed) and accuracy (errors) range from -.40 to -.69. Children's performance on the MFFT has been compared to other tasks and behaviors. In general, MFFT-designated impulsive children have been more inclined to jump at decisions (Drake, 1970; Rhetts, 1970), to pile up errors as task complexity increases (Rhetts, 1970; Yando & Kagan, 1970), to demonstrate poor verbal ability (Schwebel, 1966), and to have a higher percentage of school failure (Messer, 1970). A reflective-impulsive response tendency has also been associated with reading achievement (Samuels, Dahl, & Archwamety, 1974). The construct of conceptual tempo, as measured on the MFFT has been compared to measures of intelligence. In general, no relationships or low negative relationships have been found between latency and error scores, and IQ scores. Correlations vary depending upon the IQ measure used.

COMMENT: The MFFT appears to be measuring an important component of cognitive problem-solving ability. A number of studies support a moderate degree of reliability and validity. Studies with older children and adults are limited, although the difficulty of MFFT tasks suggest its usefulness with older age groups.

TITLE: Multiple Affect Adjective Checklist (1965) (Self Description) *

AUTHORS: M. Zuckerman and B. Lubin

PUBLISHER: EDITS Publishers, San Diego, California

AGE RANGE: Approximately 13 years of age or older (8th grade reading level)

DESCRIPTION: The Multiple Affective Adjective Checklist (MAACL) was designed to measure three clinically relevant negative affects: anxiety, depression, and hostility. The test is a self-administered test containing 132 items. Each item is a word describing an affective state (e.g., miserable, loving, satisfied) and contributes to a score on either the anxiety, depression, or hostility scale of the MAACL. Two forms of the test are available: a "general" form or a "today" form. Both use the same set of items but the former instructs the subject to describe how he "generally feels" while the latter instructs him to describe how he feels "now" or "today." A brief form of the MAACL containing 48 items is also available.

STANDARDIZATION: The MAACL was developed on a sample of 200 subjects which were drawn from a population of 1200 job applicants at the Indiana University Medical Center personnel office. Subjects were stratified by age, sex, and education to match the census distribution of these variables. The standardization sample also included 75 college students, 226 psychiatric patients, and 33 patients who were part of a drug treatment study. Means and standard deviations for normal and patient samples and normative data are included in the MAACL manual. In developing the brief scales of the MAACL, a sample of 200 normal individuals and 278 psychiatric patients was used for item analysis. Items that correlated most highly with their own scale, relative to their correlations with the other two scales, were selected for use in the brief scales.

RELIABILITY: Reliability estimates for subsamples of the standardization sample were reported for scales of both the "general" and "today" forms of the MAACL. For college students (N=35), internal reliability for general anxiety was .72 and 7-day interval of test-retest reliability was .68 (p < .01); internal reliability was .85 for today anxiety and .31 for test-retest reliability. For another sample of college students (N=46), internal reliability for today anxiety was .79, for today depression, .92, and for today hostility, .90 (p < .01). For psychiatric patients (N=50), internal reliability for today anxiety was .73, for today depression, .65, and for today hostility, .24. Test-retest reliabilities for this sample ranged from .77 to .84. In describing the brief scales, the authors reported that the correlations between the brief and full scales (A=.82, D=.93, and H=.92) indicated that the brief scales were adequate substitutes for the longer

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**Parent Answer Booklet, p. 5.*

scales. Test-retest and internal reliability estimates for the brief scales were similar to the estimates for the longer scales.

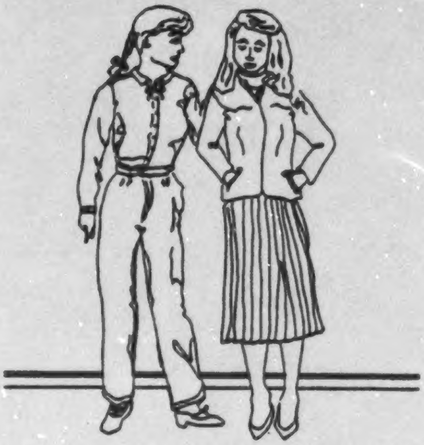
VALIDITY: Concurrent Validity: The authors reported a number of significant correlations between forms of the MAACL anxiety scale and other anxiety questionnaires. For MAACL anxiety (general). the correlations with other measures were as follows: Welsh A Scale (.65), Maslow Security (-.69), and Cattell's IPAT (.63). Correlations between MAACL anxiety (today) and these measures were similar. MAACL scores have also been significantly correlated with clinical observations of anxiety, depression, and hostility for both normal and psychiatric samples. Construct Validity: The authors reported a number of studies in which MAACL scores were associated with changes in drug treatment and changes in physiological and biochemical measures. The relationship between test anxiety and the MAACL anxiety scale has been replicated in a number of studies reported in the MAACL manual. Results of these studies have indicated that MAACL anxiety scores were sensitive to anxiety before examinations. The MAACL has also been shown to be sensitive to affective states associated with confinement, perceptual isolation, "stage fright," and pictorial stimuli. The validity of the brief scales of the MAACL closely parallels that of the longer scales. Significant correlations have been reported for MAACL brief scale scores and affect ratings from clinical observation and scores on other affect questionnaires.

COMMENT: The reliability and validity of the MAACL seem to be comparable to that of other affective measurement instruments, i.e., moderate to high validity and internal reliability, and low to moderate test-retest reliability. The advantage of the MAACL over other measures is the use of both positive and negative affective descriptors that allow the subject to describe himself across a continuum of affective states. The MAACL appears less likely to lead the subject to the purpose of the instrument and thus may be a more valid measure of an individual's affective state.

APPENDIX C:

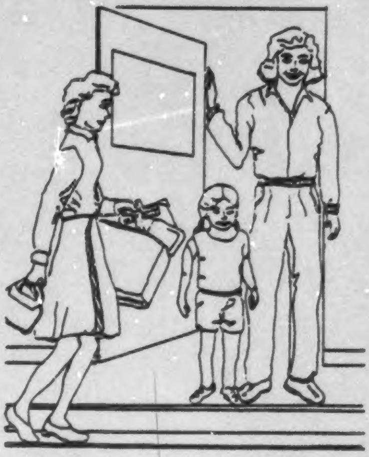
FAMILY AND FRIENDS SOCIAL NETWORK ANALYSIS PICTURE CARDS AND SCORING WORKSHEET

FAMILY AND FRIENDS



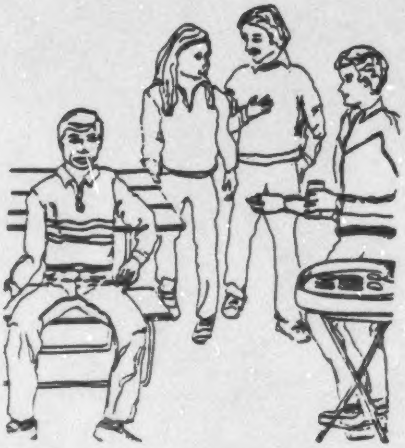
EMOTIONAL SUPPORT

A



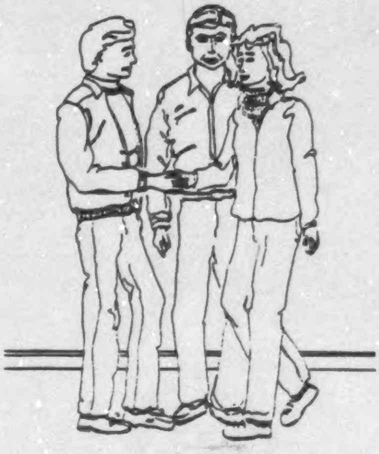
ADVICE AND HELP

B



YOU ARE SPECIAL !

C



NEW PEOPLE AND THINGS

D

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

"FAMILY AND FRIENDS" SOCIAL NETWORK ANALYSIS WORKSHEET*

QUALITY OF RELATIONSHIPS	NETWORK MEMBERS									
FOR EACH NETWORK MEMBER:	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	#10
TASK #3. FREQUENCY OF CONTACT IN THE LAST MONTH 3 = 7+ 2 - 4-6 1 = 1-3 0 = 0, no network										
SCORE										
TASK #4. MULTIDIMENSONALITY. WHY NETWORK MEMBER IS IMPORTANT TO RESPONDENT 3 = FOUR LETTERS CIRCLED 2 = TWO-THREE LETTERS CIRCLED 1 = ONE LETTER CIRCLED 0 = E CIRCLED, NO NETWORK										
SCORE										
TASK #5. RECIPROCITY. WHY RESPONDENT IS IMPORTANT TO NETWORK MEMBER 3 = FOUR LETTERS CIRCLED 2 = TWO-THREE LETTERS CIRCLED 1 = ONE LETTER CIRCLED 0 = E CIRCLED, no network										
SCORE										
QUALITY OF RELATIONSHIP. ADD SCORES FOR TASKS #3, #4, AND #5 FOR EACH MEMBER										
TOTALS										

ADD EACH MEMBER'S TOTAL SCORE TO OBTAIN TOTAL MEMBER' SCORE ☐

÷

TASK #1. NUMBER OF MEMBERS IN NETWORK (ABSOLUTE NO., 0-10) ☐ = ☐ AVERAGE QUALITY OF RELATIONSHIPS

**Parent Answer Booklet*, pp. 7-8.

CHARACTERISTICS OF THE SOCIAL NETWORK

TASK #2. NORMATIVE CONTEXT OF RELATIONSHIPS

3 = NETWORK INCLUDES BOTH RELATIVES (R) AND FRIENDS (F)
2 = NETWORK INCLUDES ONLY RELATIVES
1 = NETWORK INCLUDES ONLY FRIENDS
0 = NO NETWORK

SCORE

TASK #6. NETWORK DENSITY. EXTENT TO WHICH INDIVIDUALS WITHIN A NETWORK KNOW EACH OTHER. (INTERVIEW, P. 66)

3 = EACH MEMBER KNOWS AT LEAST ONE OTHER MEMBER
2 = 1-5 MEMBERS DO NOT KNOW AT LEAST ONE OTHER MEMBER
1 = 6-10 MEMBERS DO NOT KNOW AT LEAST ONE OTHER MEMBER
0 = NO NETWORK

SCORE

TASK #1. SIZE OF SOCIAL NETWORK NUMBER. NUMBER OF PEOPLE ENCOMPASSED BY THE NETWORK (RATING; 0-3)

3 = 7-10 PEOPLE
2 = 3-6 PEOPLE
1 = 1-2 PEOPLE
0 = 0

SCORE

SUMMARY SCORES

ADD

SIZE OF SOCIAL NETWORK =
+
AVERAGE QUALITY OF RELATIONSHIPS =
+
NORMATIVE CONTEXT OF RELATIONSHIPS =
+
NETWORK DENSITY =

QUALITY OF SOCIAL NETWORK =

APPENDIX D:

VERBAL PROBLEM-SOLVING DISCIPLINE PROBLEMS #1 AND #2 SCORING PROCEDURES

Verbal Problem-Solving

Discipline #1

Family Interview Booklet, P. 92, Q44a-44e.

Scoring

1. Range: A frequency tally of the number of unique, relevant responses across the first three questions:

    44a. What are all the things you might do?

    44b. Are there some things other parents might do?

    44c. Which one of these things would you do?

2. Effectiveness: This is a rating of the parent's approach to and rational for solving the problem, based on their responses to 44c and 44d:

    44c. Which one of these things would you do?

    44d. Why would you do that?

    The effectiveness of their approach is rated on a 3-point scale, with 3 representing an approach with high effectiveness, and 0 representing an approach with very low effectiveness. An explanation of each rating and interview examples are outlined below.

Effectiveness Ratings

3 = Positive approach to solving the problem that includes discussion of problem focusing on children's responsibility for damage done. Absence of negative approaches, such as yelling and physical punishment. *Also, positive preventive action by parent receives a 3-point rating.

Examples:

(44c) Unplug lamp and pick up broken pieces. Turn off TV. Restrict TV use for both of them for rest of day. Ask each to give their version of why they were right. Direct them to other activities which are separate and don't involve TV - a cooling off. Be sure TV wasn't on rest of day. (44d) Responsibility for problem and solution remain with participants and could be a growth experience.

Discipline #1

(44c) First shut off TV and send them both to their room. After they've thought it over, we talk about it. After they discuss what they've done, they decide what the punishment would be. Probably the one who threw the pillow would have to buy a new one. (44d) That helps them to realize what they've done. Makes them think about the situation.

*(44c) Wouldn't let it get that far. Have them talk it out - let them arrive at a decision. (44d) Good way for them to learn problem-solving.

Effectiveness Ratings

2 = Positive approach to solving the problem, but does not include discussion of problem focusing on children's responsibility for damage done. Absence of negative approaches, such as yelling and physical punishment.

Examples:

(44c) "First turn off TV. Make them sit on couch for a few minutes and think about what they were doing. Then I'd wait a few minutes and ask if they knew what they did wrong. If so, they can get up and return to TV. (44d) Because it's important that they understand what they did wrong. To turn off TV and have them sit down helps them to think about what they were doing and perhaps reach a compromise.

(44c) Shut off TV and make them go to bed. (44d) So I'd have peace and quiet and wouldn't have to listen to them argue.

(44c) Try to remove them from the situation. (44d) To give them time to think about it.

(44c) No TV for a week. (44d) That bothers the kids more than anything.

Discipline #1

Effectiveness Ratings

1 = Mixed approach to solving the problem, including both positive and negative approaches. May include discussion of problem focusing on children's responsibility for damage done.

Examples:

(44c) Make them do dishes every night for a month. Maybe given licken' with stick. (44d) It would be penance for them.

(44c) Holler. I'd remove both from situation, give time out for 6 minutes. Then sit them down at the table and we'd discuss their differences. Don't know about lamp. (44d) Don't think spanking helps child. If remove from situation so they have time to think and learn to find own answers.

(44c) She might swat them if she really lost her temper but usually she tries to handle it the other way [(44a.) Shut off TV, scold them real good. They would have to pay for lamp out of allowance money. They would have to stay in their rooms for quite a while.)] (44d) Wants them to be able to behave, not do it again.

Effectiveness Ratings

0 = Negative approach to problem or no approach, no action, ignore, "don't know." Vague responses.

Examples:

(44c) Would spank child, depends on situation--if another child gets hurt, then spanking a child might be appropriate. (44d) Don't know.

(44c) If it was a very good lamp, might swat one of the kids. (44d) Lot of anger - even though I know I shouldn't.

(44c) None of them. (44d) They have to learn responsibility to take care of things.

Verbal Problem-Solving

Discipline #2

Family Interview Booklet, P. 93, Q45a - 45e. For two-parent/partner families only.

Scoring

1. Range: A frequency tally of the number of unique, relevant responses across the first three questions:

    45a. What are all the things you might do?

    45b. Are there things only parents might do?

    45c. Which one of these things would you do?

2. Effectiveness: This is a rating of the parent's approach to and rational for solving the problem, based on their responses to 45c and 45d:

    45c. Which one of these things would you do?

    45d. Why would you do that?

    The effectiveness of their approach is rated on a 3-point scale, with 3 representing an approach with high effectiveness, and 0 representing an approach with very low effectiveness. An explanation of each rating and interview examples are outlined below.

Effectiveness Ratings

3 = Positive approach to solving problem that includes at least 3 of the elements listed below. Absence of negative approaches, such as yelling and physical punishment.

- Asking child why he was late
- Discussion of disciplinary action with spouse/partner, and agreement or comprimise on action to be taken (including "no action" as a result of discussion)

Discipline #2

'Acceptance of disciplinary action taken by spouse/partner, so as not to undermine each other's parental authority

'Specifies positive action to be taken as the contingency for breaking the rule - negative approaches such as yelling and physical punishment do not count as positive action.

Example

(45c) Ask why late - where has he been. I never send child to bed without dinner. I'd send child to room anyway after he ate, to compromise with husband. (45d) Because I don't believe in sending child to bed hungry. Food is necessity, not luxury.

2 = Positive approach to solving problem that includes 2 of the elements listed for a 3-point rating. Absence of negative approaches, such as yelling and physical punishment.

Examples:

(45c) Try to work out compromise. Have him go to his room and miss dinner but let the grandmother go in and talk to him for a while after he has had time to think about it. (45d) So that you could work out something both parents could agree to.

(45c) If father said to go to room, he'd do that but let him come out and visit once things calmed down. (45d) Don't believe in undermining one parent's authority. Don't want to play one against other.

(45c) Ask Roger [husband] if we could talk privately. Ask Roger if he would talk to son and explain he should be punished, but why parents will make an exception in this case - am sure Roger would go along with it. (45d) Basic rule of respect - I don't ever want to demean him in front of someone. We try very hard not to embarass each other or kids in front of others.

Effectiveness Ratings

1 = Positive approach to solving problem that includes 1 of the elements listed for a 3-point rating

or

Mixed approach to solving problem, including 1 or more positive approaches listed for a 3-point rating, and negative approach(es) such as yelling and/or physical punishment.

Examples:

(45c) I'd talk it over with husband to let child visit with grandmother and punish him later. (45d) Because child should see grandma. I wouldn't want to embarass him in front of his grandma.

(45c) I'd ask son where he's been and why he's late but I wouldn't chew him out until grandma left. Then I'd ground him and give out extra chores. He'd better apologize. (45d) To try to get him to learn he's better abide by house rules if he's going to grow up to be a good kid.

(45c) Try not to disagree in front of kids - just wait. (45d) Kids have a way of playing one parent against the other, especially certain ages.

Effectiveness Ratings

0 = Negative approach only to solving problem or no approach, no action, ignore, "Don't Know" or vague responses.

Examples"

(45c) None of them. (45d) Teach child a lesson.

Discipline #2

(45c) None of the above. (45d) Stupid to cause a scene when the child knows he's done wrong. We'd only have to say "we'll talk about this later," and they get the message.

APPENDIX E:

FAMILY HEALTH INDEX WORKSHEET

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

HEALTH INDEX WORKSHEET

Current Health Status of the Family

Factor I: Health Conditions	Rating Scale	Rating
Common health conditions of natural and step parents, relatives, and children.		
a. Asthma or Bronchitis		____
absence of condition	3	
1 person with condition	2	
2 people with condition	1	
3 or more people with condition	0	
b. Kidney Disease		____
absence of condition	3	
1 person with condition	2	
2 people with condition	1	
3 or more people with condition	0	
c. Diabetes		____
absence of condition	3	
1 person with condition	2	
2 people with condition	1	
3 or more people with condition	0	
d. Low or High Blood Sugar		____
absence of condition	3	
1 person with condition	2	
2 people with condition	1	
3 or more people with condition	0	
e. Heart Disease		____
absence of condition	3	
1 person with condition	2	
2 people with condition	1	
3 or more people with condition	0	
f. Cystic Fibrosis		____
absence of condition	3	
1 person with condition	2	
2 people with condition	1	
3 or more people with condition	0	

		Rating Scale	Rating
g.	High Blood Pressure		
	absence of condition	3	______
	1 person with condition	2	
	2 people with condition	1	
	3 or more people with condition	0	
h.	Thyroid Disease		
	absence of condition	3	______
	1 person with condition	2	
	2 people with condition	1	
	3 or more people with condition	0	
i.	Drug Addiction		
	absence of condition	3	______
	1 person with condition	2	
	2 people with condition	1	
	3 or more people with condition	0	
j.	Cancer		
	absence of condition	3	______
	1 person with condition	2	
	2 people with condition	1	
	3 or more people with condition	0	
k.	Alcoholism		
	absence of condition	3	______
	1 person with condition	2	
	2 people with condition	1	
	3 or more people with condition	0	
l.	Other		
	absence of condition	3	______
	1 person with condition	2	
	2 people with condition	1	
	3 or more people with condition	0	

I. TOTAL ______

	Rating Scale	Rating
Factor II: Health Complaints		
Average number of common health complaints of children living at home = $\frac{\text{total \# of complaints reported}}{\text{\# of children living at home}}$		____
no complaints	3	
1 complaint	2	
2 complaints	1	
3 or more complaints	0	
	II. TOTAL	____
Factor III: Sensory/Physical Problems		
a. Vision problems of natural and step parents, relatives, and children		____
absence of vision problem	3	
1 person with a vision problem	2	
2 people with a vision problem	1	
3 or more people with a vision problem	0	
b. Hearing problems of natural and step parents, relatives,and children		____
absence of hearing problem	3	
1 person with a hearing problem	2	
2 people with a hearing problem	1	
3 or more people with a hearing problem	0	
c. Physical handicap of natural and step parents, relatives, and children		____
absence of physical handicap	3	
1 person with a physical handicap	2	
2 people with a physical handicap	1	
3 or more people with a physical handicap	0	
	III. TOTAL	____

	Rating Scale	Rating
Factor IV: Health Habits: Smoking		
Family members including natural and step parents, relatives, and children who smoke.		____
Absence of smoking in family	3	
1 person who smokes in family	2	
2 people who smoke in family	1	
3 or more people who smoke in family	0	
IV. TOTAL		____
Factor V: Health Care		
a. Type of medical service your family uses		____
certain doctor	3	
certain clinic	2	
different doctors or clinics	1	
no regular doctor or clinic	0	
b. Extent of health care		____
routine care and only when needed	3	
routine care	2	
only when needed	1	
rarely for anything	0	
c. Visits to the doctor or clinic made by family in the past year		____
no visits	3	
1 - 6 visits	2	
7 - 15 visits	1	
more than 15 visits	0	
d. Family health insurance programs		____
private health insurance program	3	
combination of private or public health insurance programs	2	
public health insurance programs	1	
no health insurance program	0	
V. TOTAL		____

	Rating Scale	Rating
Factor VI: Perceived Quality of Health Care		
Family's level of satisfaction with the quality of they have had from the medical and health care community.		____
satisfied (4, 5)	3	
neutral (3)	2	
dissatisfied (1, 2)	1	
no perception, don't know	0	
VI. TOTAL		____

TOTALS

Factor I : Health Conditions ____________

Factor II : Health Complaints ____________

Factor III: Sensory/Physical Problems ____________

Factor IV : Health Habits: Smoking ____________

Factor V : Health Care ____________

Factor VI : Perceived Quality of Health Care ____________

CURRENT HEALTH STATUS OF FAMILY --- TOTAL ______________

APPENDIX F:

AVAILABILITY OF EDUCATIONAL RESOURCES IN THE HOME WORKSHEET

AVAILABILITY OF EDUCATIONAL RESOURCES IN THE HOME - WORKSHEET*

Where info is located...	Item/category - at least one of...	Assign 1 point if indicated or observed
IQ9	TV	
IQ9, PIO	Radio	
IQ9, PIO	Record player, stereo	
IQ9, PIO	Encyclopedia	
IQ9, PIO	Dictionary	
PIO	a. Gross motor toys & equipment	
PIO	b. Fine motor toys & materials	
PIO	c. Games	
PIO	d. Musical instruments	
PIO	e. Electronic games	
PIO	f. Child-size playpieces	
PIO	g. Outdoor sports equipment	
PIO	h. Playground equipment	
PIO	i. Children's reading materials	
PIO	o. Toys, not specified	
PIO	p. Other	
	OMIT SMALL BABY TOYS TOTAL	(16 possible)

(PIO = Post-Interview Observations)

**Family Interview Booklet, pp. 54, and Post-Interview Observation Form, p. 18.*

APPENDIX G:

SOCIOECONOMIC INDEX OF OCCUPATIONAL STATUS WORKSHEET AND MSEI2 SCORES

OCCUPATIONAL STATUS CODING WORK SHEET

☐☐☐☐

Information About: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ________________

Respondent: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ________________

	Determine occupational title code and group code for each job.	Code dates or enter appropriate OTHER codes	Use this info to help determine occupational codes	Determine industrial title code and group code for each group	Determine class-of-worker for each job	Code hours per week worked or enter appropriate OTHER codes	Enter appropriate code
	7a	7b	7c	7d	7e	7f	7g
JOB	What kind of work (are/were) you doing	In about what month and year did you... Start? / Leave?	What (are/were) your most important activities?	What kind of business or industry (is/was) this?	Employment Status (cirle)	About how many hours (are/were) you working per week? (circle)	Why did you leave?
Current Job	____ ____	mo. ___ / mo. ___ yr. ___ / yr. ___	3-digit industrial title code 2-digit industrial group code	____ ____	1 2 3 4 5 7 8 9	1. 2 3 4 5 6 7 8 9	___ ___
2	____ ____	mo. ___ / mo. ___ yr. ___ / yr. ___		____ ____			___ ___
3	____ ____	mo. ___ / mo. ___ yr. ___ / yr. ___		____ ____			___ ___

-digit occupational title code

-digit occupational group code

based on 3-digit occupational title code

Current/1st most recent job -- MSEI2: ____ ____.____ ____.
2nd most recent job -- MSEI2: ____ ____.____ ____
3rd most recent job -- MSEI2: ____ ____.____ ____

Socioeconomic Index of Occupational Status - MSEI2
(Stevens & Featherman, 1980)

CENOCC	MSEI2	CENOCC	MSEI2	CENOCC	MSEI2
001	70.17	086	62.10	170	62.08
002	78.16	090	67.61	171	34.22
003	63.57	091	81.02	172	57.76
004	75.39	092	84.75	173	41.04
005	73.01	093	81.06	174	75.57
006	83.21	094	73.79	175	55.62
010	85.39	095	77.21	180	43.06
011	75.33	096	73.21	181	70.34
012	78.32	100	64.39	182	41.20
013	71.62	101	52.30	183	62.31
014	76.21	102	82.58	184	69.51
015	81.92	103	81.82	185	40.70
020	74.22	104	81.67	190	54.58
021	80.55	105	81.96	191	42.54
022	77.08	110	80.41	192	69.09
023	75.27	111	83.30	193	50.91
024	77.74	112	79.43	194	55.67
025	47.48	113	86.63	195	71.28
026	47.10	114	84.25	196	56.71
030	70.87	115	83.03	201	43.43
031	86.96	116	84.10	202	66.48
032	65.23	120	80.04	203	33.63
033	57.14	121	79.15	205	48.70
034	84.37	122	82.13	210	56.50
035	84.33	123	78.42	211	58.33
036	71.45	124	78.57	212	68.80
042	62.73	125	86.20	213	38.91
043	77.70	126	[illegible]	215	44.89
044	76.95	130	77.74	216	40.74
045	75.56	131	74.84	220	56.34
051	85.59	132	88.65	221	36.65
052	80.72	133	76.14	222	59.78
053	85.16	134	66.90	223	53.17
054	81.72	135	79.02	224	45.23
055	65.28	140	75.22	225	56.73
056	66.21	141	59.33	226	36.42
061	77.88	142	68.99	230	36.80
062	88.49	143	50.32	231	45.36
063	84.16	144	73.02	233	69.25
064	80.35	145	48.92	235	80.14
065	87.14	150	37.65	240	84.98
071	81.94	151	45.71	245	50.89
072	85.46	152	46.26	246	41.07
073	67.90	153	45.01	260	60.93
074	39.56	154	43.46	261	35.94
075	46.62	155	49.95	262	41.68
076	56.93	156	54.73	264	32.79
080	52.99	161	36.54	265	54.57
081	53.47	162	43.47	266	16.43
082	53.47	163	68.66	270	55.28
083	45.98	164	52.62	271	72.53
084	39.66	165	52.12		
085	51.90				

MSEI2 Cont'nued

CENOCC	MSEI2
281	58.50
282	47.30
283	30.06
284	35.17
285	48.86
286	33.29
301	33.46
303	29.95
305	40.79
310	25.57
311	42.35
312	54.16
313	26.28
314	29.10
315	29.11
320	44.26
321	53.82
323	37.05
325	28.30
326	58.51
330	43.71
331	25.09
332	25.50
333	20.46
334	20.64
341	35.39
342	36.92
343	37.07
344	25.96
345	32.15
350	30.27
355	26.29
360	33.41
361	29.92
362	43.71
363	64.33
364	37.33
370	47.79
371	44.21
372	45.99
374	19.49
375	37.24
376	50.66
381	22.93
382	40.85
383	20.46
384	29.02
385	33.98

CENOCC	MSEI2
390	38.04
391	28.59
392	19.15
394	40.22
395	34.13
396	29.65
401	19.81
402	18.48
403	19.35
404	26.07
405	24.65
410	22.15
411	21.51
412	18.29
413	19.04
415	21.43
416	17.74
420	21.65
421	20.08
422	28.11
423	18.34
424	21.80
425	33.18
426	33.12
430	31.94
431	23.53
433	28.94
434	32.32
435	23.62
436	21.16
440	22.53
441	36.89
442	22.32
443	18.59
444	24.14
445	24.53
446	21.44
450	18.50
452	30.28
453	25.49
454	22.68
455	38.42
456	31.36
461	24.05
462	20.27
470	26.24
471	32.18
472	20.52
473	19.19
474	14.59
476	48.70

CENOCC	MSEI2
480	17.36
481	23.03
482	22.50
483	11.13
484	27.90
485	27.54
486	18.87
491	24.43
492	24.96
495	25.71
501	16.77
502	29.17
503	17.71
504	20.82
505	29.95
506	30.28
510	18.58
511	15.38
512	22.65
514	33.74
515	37.66
516	30.11
520	20.92
521	17.92
522	28.09
523	21.44
525	34.65
530	26.16
531	19.97
533	25.16
534	17.97
535	26.54
536	19.66
540	22.30
542	15.50
543	23.72
545	28.08
546	17.50
550	29.60
551	18.52
552	32.46
554	26.55
560	21.98
561	34.64
562	24.27
563	16.23
571	22.12
580	28.21
586	22.49

MSEI2 Continued

CENOCC	MSEI2	CENOCC	MSEI2	CENOCC	MSEI2
601	29.22	680	19.76	910	22.71
602	17.67	681	18.32	911	15.23
603	17.91	690	18.43	912	18.06
604	17.17	692	18.00	913	16.35
605	23.19	694	18.34	914	18.52
610	25.05	695	18.93	915	22.38
611	14.02	696	18.01	915	17.55
612	16.56	701	22.02	921	34.22
613	[illegible]	703	21.15	922	27.11
614	[illegible]	704	24.60	923	33.95
615	23.65	705	21.19	924	28.54
620	15.33	706	15.65	925	21.09
621	16.12	710	16.46	926	24.20
622	19.56	711	19.17	931	35.17
623	16.27	712	27.84	932	24.89
624	17.16	713	23.86	933	23.37
625	14.65	714	19.44	934	19.25
626	25.04	715	20.09	935	18.19
630	17.59	726	17.94	940	31.16
631	20.97	740	19.25	941	11.56
633	18.48	750	17.74	942	24.40
634	16.55	751	15.90	943	14.23
635	18.18	752	18.90	944	26.91
636	21.96	753	17.02	945	13.18
640	18.16	754	15.03	950	35.54
641	17.19	755	16.06	952	35.67
642	18.69	760	21.80	953	16.97
643	15.42	761	15.36	954	36.60
644	16.33	762	16.99	960	14.72
645	31.90	763	15.47	961	32.73
650	17.10	764	14.28	962	21.05
651	20.82	770	18.98	963	31.38
652	21.28	780	16.08	964	37.07
653	22.24	785	14.84	965	31.02
656	17.07	796	16.37	976	19.51
660	14.16	801	22.19	980	13.09
661	19.91	802	31.92	981	16.93
662	13.80	806	21.60	982	18.51
663	14.78	821	22.62	983	19.31
664	11.83	822	13.79	984	13.44
665	16.63	823	15.54	986	13.35
666	20.32	824	20.46	991	14.71
670	11.44	846	14.41		
671	14.92	901	15.74		
672	11.80	902	14.52		
673	11.62	903	15.80		
674	12.67				

APPENDIX H:

RESPONSE SCORING FOR SELECTED STATUS/SITUATIONAL VARIABLES

RESPONSE SCORING FOR SELECTED STATUS/SITUATIONAL VARIABLES *

Item	Response Scoring
IQ15 Yearly family income	01. Less than $2,000 02. $2,000 to $3,999 03. $4,000 to $5,999 04. $6,000 to $7,999 05. $8,000 to $9,999 06. $10,000 to $11,999 07. $12,000 to $14,999 08. $15,000 to $19,999 09. $20,000 to $24,999 10. $25,000 and over
FQ3 Mother's educational attainment GQ3 Father's educational attainment	01. 1 (grade) 02. 2 03. 3 04. 4 ...etcetera... 12. 12th grade, GED-high school equivalency diploma 13. Some college, vocational/technical training (including certification) 14. Four year college/university graduate 15. Some post-graduate study-no indication of graduation 16. Advanced degree (M.A., M.S., Ph.D., M.D.)
FQ10a-d Mother/Primary Caregiver's marital stability	1. Separated or unmarried at the time of interview (or within 2 weeks) 2. Married to other than first husband less than 10 years 3. Married up to 10 years, current husband 4. Married 11-16 years, current husband 5. Married more than 16 years, current husband
BQ10, B(other Info)Q2, IQ7 Housing Density	Total number of people living in the home divided by the number of rooms, not counting bathrooms, utility rooms, porches, or half-rooms (i.e., rooms unsuitable for sleeping or general living purposes) = Person per room ratio

**Family Interview Booklet, Parts B,F,G, & I*

Item	Response Scoring
IQ1 Residential stability (defined by number of times family moved in the last 3 years)	0. 0 1. 1 2. 2 3. 3 4. 4 5. 5 6. More than 5 times

APPENDIX I:

FAMILY INTERVIEW SCHEDULE BOOKLET

Family
Interview

2/82

FAMILY SURVEY INTERVIEW*

*Developed by Maykut, P. & Garber, H., University of Wisconsin Rehabilitation Research and Training Center, 1981.

FAMILY SURVEY INTERVIEW

INTRODUCTION

To the Parent:

Hello, ________________. My name is ______________. I'm working with the cooperative project involving the ________ public schools and the University of Wisconsin.

Recently, each family in the area with school-age children received a letter from the schools explaining the project. If you haven't received the letter or don't recall exactly what it said, I'd like to tell you a little about the project.

The ________ school system places great value on quality education programs. They are constantly concerned with how the public schools can continue to improve their programs and better coordinate with other community programs. Many people in the ________ public schools and at the University believe that a better understanding of families will help to provide information that will lead to a better school experience for each child and better community experiences for families.

A large number of families with children in different school programs were selected for the project . . . Families with children in the regular school program, in programs for the talented and gifted, and in programs for special needs, to name a few.

We would like to learn more about your family . . . more about YOUR attitudes, interests, and skills and more about the attitudes, interests, and skills of other members of your family. I would like to emphasize that everything we talk about and do together will remain STRICTLY CONFIDENTIAL. The only thing that identifies your family by name is this cover sheet (SHOW). Each family is assigned a number code (POINT). The cover sheet will be removed after our visits. Only the code will appear on the interview forms. We are interested in general in what large groups of people feel and do and would not be emphasizing you or your family.

If at any time you feel a question is an invasion of your privacy, feel free to not answer. You reserve the right to "pass" on anything I might ask.

If you have any questions about the project, we urge you to contact your school principal.

Shall we begin?

FAMILY SURVEY INTERVIEW

COVER SHEET

Mother/Mother Figure's Name ____________________ Family Code ☐☐☐☐

Father/Father Figure's Name ____________________ Home Phone __________

Address ____________________ ☐ Farm ☐ Nonfarm Work Phone __________

Target Child's Name ____________________ Target Group ____________________

Name(s) of Siblings ____________________ Grade & School ____________________

Times when home visits are best for Mother/Mother Figure ____________________

Times when home visits can include Father/Father Figure ____________________

Comments about phone contacts and home visits for other interviewers (e.g., directions to home, attitude toward home visits, etc.) ____________________

Home Visit	Date	Time	Length of Interview	Interviewer
#1				
#2				
#3				
#4				

-OVER-

FAMILY SURVEY INTERVIEW SCHEDULE

Parts Completed by Respondent and Date of Completion

Mother/ Mother Figure	Father/ Father Figure	Other Adults	Part	Page	
______	______	______	A	1	Determination of Caregiving Responsibilities
______	______	______	B	4	Child Information
______	______	______	C	15	Family Health (Cue Card #1 & 2*)
______	______	______	D	21	Family Activities (Parent Ans. Book*)
______	______	______	E	27	Attitude Toward Education and Child Rearing (Cue Card #2*)
______	______	______	F	33	Mother/Mother Figure Information (Parent Ans. Book, Cue Card #2*)
______	______	______	G	41	Father/Father Figure Information (Cue Card #2*)
______	______	______	H	47	Other Adult Information (Cue Card #2*)
______	______	______	I	53	Background Information (Parent Ans. Book, Cue Card #2*) COMPLETE 1st HOME VISIT WITH PART I. CHANGE ORDER OF PARTS IF NECESSARY
______	______	______	J	57	Language (PPVT-R, Picture Plates*)
______	______	______	K	65	Family and Friends (Parent Ans. Book Family & Friends Picture Card*)
______	______	______	L	67	Community Resources (Parent Ans. Book*)
______	______	______	M	73	Reading/Everyday Activities in Life (R/EAL Ans. Book, Cassette & Player*)
______	______	______	N	75	Personal Feelings and Beliefs (Parent Ans. Book*)
______	______	______	O	79	Problem Solving Task (MFFT Plates and Stopwatch*)
______	______	______	P	89	Our Family (Parent Ans. Book*)
Interviewer's Initial and Date of Completion					
	______	______	Q		Post Interview Observations (P.I.O. Book*)

*Materials Needed to Complete Interview Section

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ________________

PART A. Determination of Caregiving Responsibilities

1. Who is the primary caregiver for the children living in this home? That is, who has the major responsibility for caring for the children?

☐ Mother/Mother Figure . . . . . . (NAME ________________)	COMPLETE PARTS B THROUGH F AND PARTS I THROUGH P. PARTS G AND H MAY ALSO BE COMPLETED BY THIS PERSON THROUGH REPORT.
☐ Father/Father Figure . . . . . . (NAME ________________)	COMPLETE PARTS B THROUGH E, PART G, AND PARTS I THROUGH P. PARTS F (EXCEPT FOR "SELF DESCRIPTION") AND H MAY ALSO BE COMPLETED BY THIS PERSON THROUGH REPORT.

2. Is there a secondary caregiver of significance (more than occasionally good care by a sibling, housekeeper, sitter, etc.)? That is, is there someone who truly shares responsibility for caring for the children?

☐ Mother/Mother Figure . . . . . . (NAME ________________)	COMPLETE PARTS B THROUGH F AND PARTS I THROUGH P. PARTS G AND H MAY ALSO BE COMPLETED BY THIS PERSON THROUGH REPORT.*
☐ Father/Father Figure . . . . . . (NAME ________________)	COMPLETE PARTS G (1st), M (2nd), N (3rd), J (4th), P (5th; "OUR FAMILY" SCALE ONLY), and O (6th; TASK ONLY).*
☐ Adult other than Mother/Mother Figure or Father/Father Figure . . . . . . (NAME ________________)	COMPLETE PARTS H (1st), M (2nd), N (3rd), J (4th), P (5th; "OUR FAMILY SCALE ONLY), and O (6th; TASK ONLY).*
☐ No Secondary Caregiver	

3. (ASK ONLY IF A FATHER/FATHER FIGURE HAS NOT BEEN INDICATED AS A CAREGIVER) Is there a father or father figure living here?

☐ Father/Father Figure . . . . . . (NAME ________________)	COMPLETE PARTS G (1st), M (2nd), N (3rd), J (4th), P (5th; "OUR FAMILY" SCALE ONLY), and O (6th; TASK ONLY).*

☐ Father/Father Figure part of family unit but lives elsewhere
(WHERE? ________________________________).

☐ No Father/Father Figure

---

*Reduced Interview Schedule

THE PRIMARY CAREGIVER IS THE MAIN RESPONDENT FOR THE INTERVIEW SCHEDULE. STILL IN THE MAJORITY OF FAMILIES, THE PRIMARY CAREGIVER IS THE MOTHER/MOTHER FIGURE. FOR PURPOSES OF THIS STUDY, THE MOTHER/MOTHER FIGURE WILL BE ASKED TO COMPLETE ALL OR MOST PARTS OF THE INTERVIEW SCHEDULE, REGARDLESS OF WHETHER SHE HAS MAJOR OR SHARED RESPONSIBILITY FOR CAREGIVING. A FATHER/FATHER FIGURE WHO TRULY IS THE MAJOR CARETAKER WILL BE ASKED TO COMPLETE ALL OR MOST PARTS OF THE INTERVIEW SCHEDULE, AS INDICATED ABOVE.

IF A SECONDARY CAREGIVER IS PRESENT, IT WILL MOSTLY LIKELY BE THE FATHER/FATHER FIGURE. HE WILL BE ASKED TO COMPLETE CERTAIN PARTS OF THE INTERVIEW SCHEDULE, AS INDICATED ABOVE. PRIORITIES HAVE BEEN GIVEN TO THE INFORMATION TO BE OBTAINED FROM THE FATHER/FATHER FIGURE SINCE INTERVIEW TIME MAY BE MORE LIMITED.

IN SOME FAMILIES, AN ADULT OTHER THAN THE MOTHER/MOTHER FIGURE OR FATHER/FATHER FIGURE MAY SHARE RESPONSIBILITY FOR CAREGIVING. FOR EXAMPLE, THIS MIGHT OCCUR IN A FAMILY MADE UP OF CHILDREN, THEIR MOTHER, AND THE MATERNAL GRANDMOTHER, WHERE THE GRANDMOTHER IS A SECONDARY CAREGIVER. SHE WILL BE ASKED TO COMPLETE CERTAIN PARTS OF THE INTERVIEW SCHEDULE, AS INDICATED ABOVE. AGAIN, PRIORITIES HAVE BEEN ASSIGNED.

A FATHER/FATHER FIGURE WHO IS PRESENT IN THE HOME BUT WHO IS NOT INDICATED AS A CAREGIVER WILL ALSO BE ASKED TO COMPLETE CERTAIN PARTS OF THE INTERVIEW AS INDICATED ABOVE. AGAIN, PRIORITIES HAVE BEEN ASSIGNED.

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ______________________

☐☐☐☐

Part B. Child Information (RECORD RESPONSES ON APPROPRIATE RECORDING GRID)

General Child Information (RECORD RESPONSES ON GRID #1)

Now I'd like to ask you a few questions about each of your children.

1. First, I'd like you to tell me the first name of each of your children. Please include children who are living at home with you and children who are not living at home at this time. (RECORD IN COLUMN 1; FOR EACH CHILD LISTED ASK QUESTIONS 2 THROUGH 10.)

2. What is his/her sex? (CIRCLE M FOR MALE OR F FOR FEMALE IN COLUMN 2.)

3. Is (NAME) your child by birth (B), your child through adoption (A), a foster child (F), or a relative (R)? (CIRCLE APPROPRIATE LETTER IN COLUMN 3: IF CHILD IS RESPONDENT'S CHILD BY BIRTH, ASK 3a; IF CHILD IS NOT RELATED TO RESPONDEND BY BIRTH, ASK 3b.)

   3a. Is (NAME) your first-born, second-born, third-born, etc.? (RECORD ORDINAL POSITION BELOW DIAGONAL)

   3b. How long has (NAME) been living with you? (RECORD LENGTH OF TIME BELOW DIAGONAL)

4. When was (NAME) born? (RECORD MONTH/DAY/YEAR IN COLUMN 4)

5. COMPUTE AGE FOLLOWING INTERVIEW BASED ON CHILD'S BIRTHDAY AND DATE OF INTERVIEW.

6. What was the last grade (NAME) completed in school?

7. Is/Was (NAME) in a regular school program (R), a special help program (S), a program for gifted or talented students (G), a preschool program (P) (NOTE IF PRESCHOOL, NURSERY, OR DAY CARE IN SPACE BELOW), or other type (O)? (CIRCLE APPROPRIATE LETTER CODE IN COLUMN 7; IF CHILD IS/WAS IN A SPECIAL HELP (S) OR OTHER TYPE OF PROGRAM (O) ASK 7a.)

   7a. What kind of program is/was (NAME) enrolled in? (RECORD RESPONSE -- PARENT'S PERCEPTION OF PROGRAM -- IN COLUMN 7.)

8. (ASK FOR CHILD IN SCHOOL ONLY) What is the name of the school (NAME) now attends? (RECORD IN COLUMN 8.)

9. Is (NAME) presently working or enrolled in school or training programs? (IF YES, ASK FOR JOB, SCHOOL, OR TRAINING PROGRAM; RECORD IN COLUMN 9.)

10. Does (NAME) live here at home with you? (IF NO, ASK WHERE THEY LIVE; RECORD IN COLUMN 10.)

Part B. Recording Grid #1

1	2	3	4	5	6	7	8	9	10
Name	Sex	Relationship	Birthday	Age yrs-mo-day	Last Grade Completed	School Program	Name of School	Job, School, Trng. Program	Living At Home
	M F	B/A/F/R	__/__/__	__/__/__		R S G P O			
	M F	B/A/F/R	__/__/__	__/__/__		R S G P O			
	M F	B/A/F/R	__/__/__	__/__/__		R S G P O			
	M F	B/A/F/R	__/__/__	__/__/__		R S G P O			
	M F	B/A/F/R	__/__/__	__/__/__		R S G P O			
	M F	B/A/F/R	__/__/__	__/__/__		R S G P O			
	M F	B/A/F/R	__/__/__	__/__/__		R S G P O			
	M F	B/A/F/R	__/__/__	__/__/__		R S G P O			
	M F	B/A/F/R	__/__/__	__/__/__		R S G P O			

5

Part B. Recording Grid #1 (Con't)

1	2	3	4	5	6	7	8	9	10
Name	Sex	Relationship	Birthday	Age yrs-mo-day	Last Grade Completed	School Program	Name of School	Job, School, Trng. Program	Li[illegible]
	M F	B / A / F / R	__/__/__	__/__/__		R S G P O			
	M F	B / A / F / R	__/__/__	__/__/__		R S G P O			
	M F	B / A / F / R	__/__/__	__/__/__		R S G P O			
	M F	B / A / F / R	__/__/__	__/__/__		[illegible] 0			
	M F	B / A / F / R	__/__/__	__/__/__		R S G P O			
	M F	B / A / F / R	__/__/__	__/__/__		R S G P O			
	M F	B / A / F / R	__/__/__	__/__/__		R S G P O			
	M F	B / A / F / R	__/__/__	__/__/__		R S G P O			
	M F	B / A / F / R	__/__/__	__/__/__		R S G P O			

Specific Child Information (RECORD RESPONSES ON GRID #2; CIRCLE THE NUMBER CODE THAT COMES CLOSEST TO THE GIVEN RESPONSE; SPECIFY RESPONSES WHERE INDICATED BELOW NUMBER CODES: USE PAST TENSE FOR CHILDREN NO LONGER IN SCHOOL)

Now I'd like to ask you some things about just the children that are living at home.

1. TRANSFER NAMES OF CHILDREN WHO ARE LIVING AT HOME TO GRID #2 FROM GRID # 1 (COLUMN 10)

2. Did (NAME) attend a preschool, nursery, day care, or Headstart program? (CIRCLE YES OR NO IN COLUMN 2)

3. How much education do/did you want (NAME) to receive? (RECORD RESPONSE IN COLUMN 3)

   1. Postgraduate education (a higher degree)
   2. Graduate from University (a first degree)
   3. At least some University
   4. High school plus some vocational training
   5. Finish high school, or as much school as possible
   6. Leave school as soon as possible
   7. Other answer (Specify)

4. How much education do/did you expect (NAME) to receive? (RECORD RESPONSE IN COLUMN 4)

   1. Post graduate education (a higher degree)
   2. Graduate from University (a first degree)
   3. At least some University
   4. High school plus some vocational training
   5. Finish high school, or as much school as possible
   6. Leave School as soon as possible
   7. Other answer (Specify)

5. What about jobs? What kinds of jobs would you like (NAME) to have? (RECORD RESPONSE, INCLUDING NAME OF JOB DESIRED, IN COLUMN 5)

   1. Job requiring postgraduate education (doctor, dentist, lawyer, scientist, etc.)
   2. Job requiring university degree (teacher, engineer, CPA, architect)
   3. Parents have high educational expectations (See Q4) and they state that "it is up to the child to decide"
   4. Job requiring high school graduation and some vocational training
   5. Job requiring some high school education
   6. Job requiring little education, or parents have low educational expectations (See Q4) and they state that "it is up to the child to decide"
   7. Other answer (Specify)

6. Do you really think **(NAME)** **will** become a (NAME THE JOB JUST MENTIONED)? (RECORD RESPONSE IN COLUMN 6)

1. Yes (emphatically!)
2. I hope so
3. No (I don't think so), or parents indicate that it is up to the child to decide, or parents say they don't care)
4. Other answer (Specify)

7. What kinds of things does (NAME) usually do in the evening after he/she gets home from school or work? (RECORD RESPONSES IN COLUMN 7)

1. Working on homework, reading
2. Watching TV, listening to radio or record player
3. Helping around home (e.g., trash, pets, chores)
4. Playing with brothers and sisters
5. Playing with neighborhood kids
6. Wandering aimlessly; no real activity
7. Activities with parents (Specify)
8. Hobby (Specify)
9. Other (Specify)

8. How often does **(NAME)** give or get help with problems or homework from brothers or sisters?

1. Nearly all the time
2. Quite a lot of the time
3. Not very much of the time
4. Never
5. Other anwser (Specify)

9. With whom does **(NAME)** spend most of his/her time; a close friend, a few close friends, a parent, or other family members? (RECORD RESPONSE IN COLUMN 9)

1. A close friend
2. A few close friends
3. Parent
4. Other family
5. Usually alone
6. Other answer (Specify)

10. Does **(NAME)** share a bedroom or does he/she have his/her own room? (CIRCLE 1 OR 2 IN COLUMN 10)

1. Own bedroom 2. Shares bedroom

11. Does **(NAME)** have any hobbies or interest such as collecting things, building models or other things? (IF YES, ASK ABOUT HOBBIES, INTERESTS AND RECORD RESPONSE IN COLUMN 11)

12. Every child has strong and weak points. Some children are able to do things that most children can't do. What are the things that **(NAME)** can do especially well? (RECORD RESPONSE IN COLUMN 12)

Part D. Recording Grid #2

1	2	3	4	5	6	7	8	9	10	11	12
Name	Pre-School	Educ. Want	Educ. Expect	Job Want	Job Expect	Home Activity	Educ. Help	Social Orient.	Bed-Room	Hobbies, Interests	Strengths
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5	1 2 3 4 5 6	1 2		
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6	1 2 3 4 5 6	1 2		
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6	1 2 3 4 5 6	1 2		
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6	1 2 3 4 5 6	1 2		
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6	1 2 3 4 5 6	1 2		

Part B. Recording Grid #2 (Con't)

1	2	3	4	5	6	7	8	9	10	11	12
Name	Pre-School	Educ. Want	Educ. Expect	Job Want	Job Expect	Home Activity	Educ. Help	Social Orient.	Bed-Room	Hobbies, Interests	Strengths
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5	1 2 3 4 5 6	1 2		
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6	1 2 3 4 5 6	1 2		
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6	1 2 3 4 5 6	1 2		
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6	1 2 3 4 5 6	1 2		
	Yes No	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6	1 2 3 4 5 6	1 2		

Other Information

1. May I ask how many children have you had -- if any -- who are not now living?

_______(#) Or ☐ None
(GO TO Q2)

1a. Could you tell me in just a few words what happened? ____________

2. Do any other adults live here besides you .. such as a grandmother, uncle, or friend?

☐ Yes ☐ No
(GO TO PART C)

2a. What is/are the name(s)? (LIST EACH PERSON BELOW, RECORD SEX, THEN ASK Q's BELOW, AS APPROPRIATE, FOR EACH PERSON)

2b. What is this person's relationship to you? (RECORD BELOW)

2c. What is (NAME)'s age? (RECORD BELOW)

2d. At what job is (NAME) working? (RECORD BELOW)

2a		2b	2c	2d
Name	Sex	Relationship	Age	Occupation

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

☐☐☐☐

Part C. Family Health

Now I'd like to ask you some questions about your family's health. This will include some questions about health problems that are common in many homes and some questions about health-related activities.

1. (SHOW CARD #1) On Side A of this card are listed common health complaints of children. Please look down the list as I read each item. Please tell me if any of your children often complain of any of the following: (INTERVIEWER READS AND RECORDS NAME(S) OF CHILDREN WITH HEALTH COMPLAINT, 1a.)

	1a. Who is this?
Colds	____________
Ear infections	____________
Stomach aches, pains	____________
Headaches	____________
Seizures, convulsions	____________
Cuts, bruises from accident, falling	____________
Too tired (gets tired easily)	____________
Other: ____________	____________

1b. Have any of your children been knocked out after a fall or had any mild hits on the head? ____________

2. (CONTINUE TO SHOW CARD #1) Now I'd like you to look at Side B of this card. Here are listed some common health problems and conditions. Would you mind telling me if anyone in your immediate family--adults or children--have any of the following conditions? (INTERVIEWER READS AND RECORDS NAME(S) OF FAMILY MEMBERS WITH CONDITION, 2a.)

	2a. Who is this?
Asthma or bronchitis	____________
Kidney disease	____________
Diabetes	____________
Low blood sugar	____________
Heart disease	____________
Cystic fibrosis	____________
High blood sugar	____________

☐☐☐☐

Thyroid disease ____________________
Drug addiction ____________________
Cancer ____________________
Alcoholism ____________________
Other: ____________________

THIS QUESTION MAY EVOKE IMPORTANT ANECDOTAL INFORMATION, EITHER SPONTANEOUSLY OR THROUGH NONDIRECT PROBES SUCH AS, "COULD YOU TELL ME MORE ABOUT THAT?" OR "IS THERE ANYTHING ELSE YOU'D CARE TO SHARE ABOUT (NAME'S CONDITION)? RECORD ADDITIONAL COMMENTS BELOW.

3. Has anyone in your family ever had any problems with their vision?

☐ Yes ☐ No (GO TO Q4)

3a. Who is this? ____________________
3b. What is/was the problem? ____________________
3c. When did you first notice this? ____________________
3d. Was anything done to correct it? ____________________

4. Has anyone in your family ever had any problems with their hearing?

☐ Yes ☐ No (GO TO Q5)

4a. Who is this? ____________________
4b. What is/was the problem? ____________________

4c. When did you first notice this? ______________________________

____

4d. Was anything done to correct it? ______________________________

____

5. Does anyone in your family have a physical handicap; that is, does anyone have problems getting around?

☐ Yes ☐ No (GO TO Q6)

5a. Who is this? ______________________________

5b. Could you tell me how this happened? ______________________________

____

____

5c. Does (NAME) use a wheelchair, walker, braces, or other kind of aid?

☐ Wheelchair ☐ Braces ☐ No

☐ Walker ☐ Other (Specify) _______ (Go to Q6)

5d. Does this affect (NAME)'S ability to do their usual work or attend school?

☐ Yes ☐ No ☐ Don't know

6. Except for when you had a baby, have you or anyone else in your family ever had to go to a hospital or other institution?

☐ Yes ☐ No (GO TO Q 7)

6a. Who was this? (RECORD ON NEXT PAGE)

6b. When was this? (RECORD ON NEXT PAGE)

6c. How long did (NAME) stay there? (RECORD ON NEXT PAGE)

6d. Why was it necessary for (NAME) to go there? (RECORD ON NEXT PAGE)

6a	6b	6c		6d
Name	When	Length of Stay		Reason
		Out-patient (✓)	In-patient	

7. Does your family have one certain doctor whom you contact for any illness or injury you may have, or do you go to a certain clinic, or do you select different doctors or clinics depending on the problem, or don't you have any regular doctor or clinic that you use?

☐ Certain doctor
☐ Certain clinic
☐ Different doctors or clinics
☐ No regular doctor or clinic

8. Do family members use medical services for routine care, such as dental checkups, or only when needed, or for both routine and emergency care, or rarely for anything.

☐ Routine care
☐ Only when needed
☐ Both
☐ Rarely for anything

9. About how many visits has your family made to the doctor or clinic in the past year for illness, injuries, or other health problems?

# Visits ____________________

10. Does anyone in your family smoke cigarettes?

☐ Yes ↓ ☐ No (GO TO Q11)

10a. Who is this? (LIST NAMES) →	10b. How much do you/they smoke in one day?
______________	☐ Less than 5 ☐ 1 pack ☐ 1/2 pack ☐ More than 1 pack
______________	☐ Less than 5 ☐ 1 pack ☐ 1/2 pack ☐ More than 1 pack
______________	☐ Less than 5 ☐ 1 pack ☐ 1/2 pack ☐ More than 1 pack

11. Does your family participate in any food assistance program such as the Supplemental Food Program for Women and Children (WIC), food stamps, school hot lunch, or some other program?

☐ WIC ☐ School hot lunch ☐ No
☐ Food stamps ☐ Other (Specify) ________

12. Is your family covered by health insurance?

☐ Yes ☐ Only some members ☐ No (GO TO Q13)

12a. What kind of health insurance do you have? (e.g., Wisconsin Physicians Service (WPS), Blue Cross/Blue Shield, Medicaid, Medicare, etc.) ______________________________

____

____

13. Some people are more satisfied than others about the quality of care they've had from the medical and health care community. (SHOW CARD #2). I'd like you to tell me which face best sums up how you feel about the medical and health services your family have received. (CIRCLE RESPONSE)

1 2 3 4 5

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

☐☐☐☐

Part D. Family Activities*

(HAND RESPONDENT PARENT ANSWER FORM BOOKLET) In this booklet are answer forms that we will be using at different times during the interview. These forms will be kept confidential. All forms will be identified by code. (POINT TO CODE BOX) No names will be put on any forms.

We're interested in understanding more about your family...the kinds of activities you take part in, the way you feel about your schools, and questions like these. Frank answers to questions will help us get to know you better, and we hope, will help schools to improve their programs for children. Please turn to Page 1 in your booklet. Here are some examples of how to answer the question, "How important is it that your children learn to swim?" If "very important" tells best how you would answer this question, your answer would look like Example #1. If "unimportant" tells best how you would answer this question," your answer would look like Example #2. If you think it is "somewhat important" that you children learn to swim, your answer would look like Example #3. If you think learning to swim is "somewhat unimportant," your answer would look like Example #4. If you feel your answer would fall about halfway between these extremes of very important and unimportant, you would mark the middle blank, as shown in Example #5.

The choice of answers for each of the questions I'm going to ask are different than these examples, but the idea is the same. You place your "X" in one of the blanks to show how you would answer the question.

Now turn to Page 2 of your booklet. I will read each question aloud while you mark your answer in the booklet. Think about each question as it concerns your children in general. If the way you would answer would be very different for a particular child, tell me how it would be different. (IF THIS OCCURS, OBTAIN A RESPONSE FOR CHILDREN IN GENERAL. THEN INDICATE BELOW THE QUESTION, FOR WHOM IT WOULD BE DIFFERENT AND THE RESPONSE IN TERMS OF THE PARTICULAR CHILD. ALSO RECORD OTHER COMMENTS BELOW EACH QUESTION.)

INTERVIEWER READS QUESTIONS AND ENDS OF THE RESPONSE CONTINUUM WHILE RESPONDENT MARKS IN BOOKLET.

The first question is...

1. Not counting what happens at school, how often do your children go to the library, or a museum, or someplace like that?

   Once a week ______: ______: ______: ______: ______ Less than once a year

   COMMENTS:

---

*Items used in "Family Activities" have been adapted from the Henderson Environment Learning Process Scale (Henderson, Bergan, & Hunt, 1972). Used with permission.

2. When your children have a chance to choose what to do around the house, how often do they choose to look at a book or magazine?

Almost every day ______: ______: ______: ______: ______ Very seldom

COMMENTS:

3. How often do you attend social gatherings (e.g., parties, dances, church activities, PTA)?

Less than once a year ______: ______: ______: ______: ______ Once a week

COMMENTS:

4. How often do you take part in social activities in which some of the people are of different ethnic groups or races (e.g., church, parties, etc.)?

Once a week ______: ______: ______: ______: ______ Less than once a year

COMMENTS:

5. How often do you visit someone who is not related to you?

Almost never ______: ______: ______: ______: ______ Almost daily

COMMENTS

6. How often do you visit friends who live in neighborhoods other than your own?

Almost daily ______: ______: ______: ______: ______ Almost never

COMMENTS:

7. How often do you talk to your children about things they have seen on TV? (CHECK _______ IF NO TV)

Almost never ______: ______: ______: ______: ______ Almost daily

COMMENTS:

8. If your children ask you a question you can't answer, how often do you try to find the answer by looking in a book?

Never ________: ________: ________: ________: ________ Always

COMMENTS:

9. How often do your children see you reading something?

Almost every day ______: ______: ______: ______: ______ Never

COMMENTS:

DIRECT RESPONDENT TO TURN TO PAGE 3 IN THEIR BOOKLET.

10. How often do your children see other adults living in the home reading something?

Almost every day ______: ______: ______: ______: ______ Never

COMMENTS:

11. How often do your children see you reading a novel, or some other book?

Never _______: _______: _______: _______: _______ Almost every day

COMMENTS:

12. How often do your children's activities include pretending "real life" adult activities, such as keeping house, working in a store, or driving a bus? (ALSO COUNT ADULT CHORES THAT CHILDREN ACTUALLY DO)

Very often _________ : _________ : _________ : _________ : _________ Never

COMMENTS:

13. How much do you or other adults in the home talk with the children at mealtime?

Not much _______ : _______ : _______ : _______ : _______ Most of the time

COMMENTS:

14. How much did you read to your children before they could read for themselves?

Almost never _______ : _______ : _______ : _______ : _______ Almost daily

COMMENTS:

REMIND RESPONDENT TO TELL YOU IF THEIR RESPONSE WOULD BE VERY DIFFERENT FOR A PARTICULAR CHILD. IF SO, OBTAIN A RESPONSE FOR CHILDREN IN GENERAL, THEN INDICATE BELOW THE QUESTION FOR WHOM IT WOULD BE DIFFERENT AND THE RESPONSE IN TERMS OF THE PARTICULAR CHILD.

15. How often do you tell your children that they have behaved well at school?

Very often (Whenever I find out) _______ : _______ : _______ : _______ : _______ Never (Never find out)

COMMENTS:

16. How often do you read the newspaper?

Daily _________: _________: _________: _________: _________ Never

COMMENTS:

17. How often do your children come to you with homework problems?

Very often ________: ________: ________: ________: ________ Never

COMMENTS:

18. How much did you help your children to recognize words or letters before they entered school?

A great deal _______: _______: _______: _______: _______ No [illegible]

COMMENTS:

19. How often do you ask your children what they have done in school?

Almost never ______: ______: ______: ______: ______ Almost every day

COMMENTS:

20. How often do you give your children a pat or hug or something like that when you are pleased with the way they are learning?

Very often ______: ______: ______: ______: ______ Almost never

COMMENTS:

21. How often do you tell friends or family about some clever thing one of your children has said?

Very often ______: ______: ______: ______: ______ Almost never

COMMENTS:

22. When your children go someplace with you, how likely are you to point out things which they might not have noticed before?

Very unlikely ______: ______: ______: ______: ______ Very likely

COMMENTS:

23. How often do you explain to your children what steps must come first, second, and so on, in doing some task?

Very often ______: ______: ______: ______: ______ Very seldom

COMMENTS:

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

Part E. Attitudes Toward Education and Child Rearing

We've talked a little about some things that involve learning and education. One of the main goals of this project is to learn more about how parents feel about their children's schools.

1. When was your most recent contact with the school concerning your children's education?

   ☐ Within the last 2 weeks ☐ Within the last month ☐ Within the last 3 months ☐ More than 3 months ago

2. What was the reason for the contact? (IF BEHAVIOR OR ACADEMIC PROBLEM, PROBE: "WHO WAS HAVING THE PROBLEM? WHAT WAS THE PROBLEM? WHAT WAS DONE?")

3 Were you satisfied with what happened?

   ☐ No ☐ Yes (GO TO Q4)

   3a. What could have been improved? ____________________

4. Have any of your children skipped or repeated a grade in school?

   ☐ Yes ☐ No (GO TO Q5)

   4a. Who was this? → 4b. Skipped or repeated? → 4c. What grade?

5. (SHOW CARD #2) I'd like you to tell me which face best sums up how you feel about the contacts you've had with the schools, in general. (CIRCLE RESPONSE)

1 2 3 4 5

6. For the most part, teachers teach children in school classrooms. If it were possible, would you be interested in working on learning activities in your home with your child and a teacher? For example, learning how to better help your child with a difficult problem or how to make daily chores richer learning activities?

☐ Yes ☐ No ☐ Don't know

7. In some communities, people have gotten together to form a "parent center." At the center, a parent can learn ways of helping their children do better in school. They can check out games and other activities to use with their children. People at the center can also help parents find answers to problems they may have concerning themselves or their children. If (NAME OF TOWN) had a parent center, do you think you would use it?

☐ No ☐ Don't know ☐ Yes (GO TO Q8)

7a. May I ask why you feel this way? ______________________

____

____

____

8. Would you be interested in being in a group where parents get together to talk about "being parents."

☐ Already in group ☐ Yes ☐ No ☐ Don't know (GO TO Q9)

8a. What group is that? ______________________

____

8b. What kinds of things do you do as a group? ______________________

____

____

9. Most parent-teacher meetings and parent groups take place at school. Do you have a car or some other way of getting to these meetings?

☐ Yes ☐ No

☐☐☐☐

10. Do you have child care, if needed, to enable you to go to these meetings?

☐ Yes

10a. Who would care for your child(ren)?

____

____

____

☐ No

10b. Would you like the schools to provide this service or help you find someone?

☐ Yes ☐ No ☐ Don't know

Getting an idea of what happens or how often something happens is only part of the "family picture." We are also as interested in knowing some of your opinions on raising and educating children.*

(SHOW CARD #2) On this card are five facial expressions and a number that goes with each one. I'm going to read aloud some statements and would like you to tell me how much you agree or disagree with each statement. Tell me #1 if you strongly disagree with the statement; #2 if you disagree somewhat; #3 if you're not sure. Tell me #4 if you agree somewhat with the statement or #5 if you strongly agree. I'll read each statement aloud. After I finish each one, please tell me the number that indicates how much you agree or disagree with the statement.

INTERVIEWER READS ITEMS AND PUTS AN "X" OVER RESPONDENT'S CHOICE FOR EACH ITEM

The first statement is ...	(PUT AN "X")				
11. The most important thing to teach children is absolute obedience to parents.	1	2	3	4	5
12. Now that my child is in school, the school has the main responsibility for his/her education	1	2	3	4	5
13. Children generally do not do what they should unless someone sees to it.	1	2	3	4	5
14. I teach my children that he/she should be doing something useful at all times.	1	2	3	4	5
15. It's all right for my child to disagree with me.	1	2	3	4	5
16. Children should always obey their parents.	1	2	3	4	5

---

*Items 11 through 25 comprise the Parental Modernity Scale (Schaefer & Edgerton, 1981). Used with permission.

17.	Teachers need not be concerned with what goes on in a child's home.	1	2	3	4	5
18.	I go along with the game when my child is pretending something.	1	2	3	4	5
19.	Parents should teach their children to have unquestioning loyalty to them.	1	2	3	4	5
20.	Teachers should discipline all the children the same.	1	2	3	4	5
21.	Children should not question the authority of their parents.	1	2	3	4	5
22.	What I teach my child at home is very important to his/her school success.	1	2	3	4	5
23.	Children will be bad unless they are taught what is right.	1	2	3	4	5
24.	A child's ideas should be seriously considered in making family decisions.	1	2	3	4	5
25.	A teacher has no right to seek information about a child's home background.	1	2	3	4	5
26.	It is important for a child to be curious about things.	1	2	3	4	5

27. How would you describe a "good teacher?" ____________________

28. Are there any changes or new things you would like to see happen that concern your children's education?

☐☐☐☐

____
____
____
____
____

Probes

"How could it be improved?"

"How could it be different?"

"How would you like it to be?"

"Could you give me an example of what you mean by ____________?"

"What do you mean by ____________?"

"How does ____________ differ from what you experiences in another school or place?"

☐☐☐☐

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________
... OR ... ☐ No Mother/Mother Figure in Home (SKIP THIS SECTION)

Part F. Mother/Mother Figure Information

We've talked a lot about your children and your family. Now I would like to spend some time learning more about you...a little about your background and your lifestyle, and the way you feel about certain things. If at anytime you feel a question is an invasion of your privacy, feel free not to answer it. We would prefer to have no answers to some questions rather than intrude.

1. When were you born? ____________________(MONTH/DAY/YEAR)

2. I would like you to recall when you were in school. What kind of student were you? How would you describe yourself? ____________________

3. What was the last grade of school you completed?

☐ 3rd
☐ 4th
☐ 5th
☐ 6th
☐ 7th
☐ 8th
☐ 9th
☐ 10th
☐ 11th
☐ 12th (GO TO Q4)

3a. Would you mind telling me why you left school? ____________________

4. Did you skip or repeat a grade in school?

☐ Yes
☐ No (GO TO Q5)

4a. Would you mind explaining the circumstances? ____________________

☐☐☐☐

5. Did your education include Kindergarten?

☐ Yes ☐ No

6. Have you had any additional education or training?

- ☐ None
- ☐ Vocational/Technical Training (Specify) ______________________
- ☐ Some College
- ☐ Community/Junior College Graduate
- ☐ Four Year College/University Graduate
- ☐ Some Postgraduate Study
- ☐ Advanced Degree
- ☐ Other (Specify) ______________________

7. Now I have a few questions to ask about your work. First, are you employed now, looking for work, retired, or what?

☐ Employed ☐ Looking ☐ Retired ☐ Housewife ☐ Other (Specify)________________ ☐ Never worked (GO TO Q10)

7a. What kind of work (are/were) you doing? (For example: electrical engineer, stock clerk, farmer) RECORD BELOW)

7b. In about what month and year did you start this job? (RECORD BELOW)

7c. What (are/were) your most important activities or duties? (For example: kept account books, filed, sold cars, operated printing press, finished concrete) (RECORD ANSWER BELOW)

7d. What kind of business or industry was this? (For example: TV and radio manufacturer, retail shoe store, State Labor Dept., farm) (RECORD BELOW)

7e. (Are/Were) you: ...An employee of a private company, business or individual for wages, salary, or commission? (CIRCLE 1 BELOW)

...A government employee? (Federal, state, county, or local government?) (CIRCLE 2 BELOW)

...Self-employed in own business, professional practice, or farm? IF YES, ASK: Is your own business not incorporated or farm (CIRCLE 3 BELOW) OR Is your own business incorporated (CIRCLE 4 BELOW)

...Working without pay in a family business or farm? (CIRCLE 5 BELOW)

7f. Approximately how many hours per week (are/were) you working? (RECORD BELOW)

7g. Why did you leave that job? (RECORD BELOW)

ASK Q's a THROUGH f FOR CURRENT JOB, THEN ASK Q's a THROUGH g FOR THE TWO PREVIOUS JOBS. NOTE: IF YOU HAVE ANY REASON TO BELIEVE THAT A PAST OR CURRENT PLACE OF EMPLOYMENT POSSESSES SERIOUS HEALTH HAZARDS, PROBE: "DO/DID YOU WORK WITH OR IN A PLACE WITH CHEMICALS, X-RAYS OR HORMONES?" RECORD RESPONSE IN THE MARGINS OF THE EMPLOYMENT HISTORY PAGES.

36

	7a	7b		7c	7d	7e	7f	7g
JOB	What kind of work (are/were) you doing	In about what month and year did you... Start?	Leave?	What (are/were) your most important activities?	What kind of business or industry (is/was) this?	Employment Status	About how many hours (are/were you working per week?	Why did you leave?
Current Job			▨			1 2 3 4 5		▨
2						1 2 3 4 5		
3						1 2 3 4 5		

8. (SHOW CARD #2) FOR Q's 8 AND 9) How satisfied are you, on the whole, with the job (including housewife) you have? What facial expression best sums up how satisfied you are? Just tell me the number that goes with the face. (CIRCLE RESPONSE)

1 2 3 4 5

9. (FOR RESPONDENT EMPLOYED OUTSIDE THE HOME) What chances do you have to advance or get a better job? Which facial expression best sums up what your chances are? Just tell me the number that goes with the face. (CIRCLE RESPONSE)

1 2 3 4 5

☐☐☐☐

10. What is your current marital status, married, widowed, divorced, separated, or never married?

☐ Married ☐ Divorced ☐ Never married

☐ Widowed ☐ Separated (GO TO Q11 IF PRESENCE OF A PARTNER HAS BEEN INDICATED)

10a. In what year did this occur? ______________(YEAR)

10b. How old were you when you were first married __________(YEARS)

10c. How many times have you been married? _________(#)

10d. How many times have you been divorced? ________(#)

11. (ASK IF MARRIED OR PRESENCE OF A PARTNER HAS BEEN INDICATED.) The way people feel about their relationship with their spouse/partner varies. Some times are better than others. When the two of you seem to agree on things and share interests and friendship, you could say you are "in harmony." (SHOW CARD #2) Which facial expression best sums up the "harmony" of your relationship at this time? Just tell me the number that goes with the face. (CIRCLE RESPONSE)

1 2 3 4 5

12. I'd like to ask you a few questions about your experience with pregnancy and childbirth. Have you had any illnesses, accidents, or other difficulties during any of your pregnancies?

☐ Yes ☐ No (GO TO Q13)

12a. What child was this? ____

12b. Could you briefly describe the circumstances? ________________

____

____

12c. In what month of pregnancy did this occur? ________________

____ ☐ Don't remember

13. Was there anything unusual about the birth of any of your children?

☐ Yes ☐ No (GO TO "SELF DESCRIPTION")

13a. With what child was this? ________________________________

13b. Could you briefly describe the circumstances? ________________

____

____

☐☐☐☐

Self-Description*

Now I'd like you to turn to Page 5 of your booklet. On this page are words which describe different kinds of moods and feelings. I'd like you to mark an "X" in the boxes beside the words which describe how you generally feel. Some of the words may sound alike, but I want you to check all the words that describe your feelings. I will read each word aloud while you mark the boxes that describe how you generally feel. (IF REQUESTED, A WORD MAY BE DEFINED FOR THE RESPONDENT STAYING AS CLOSE TO THE STANDARD DEFINITION AS POSSIBLE. NOTE EXCESSIVE REQUESTS FOR DEFINITION.)

INTERVIEWER READS WORDS WHILE RESPONDENT MARKS IN BOOKLET.

1. Active
2. Afraid
3. Agreeable
4. Alive
5. Alone
6. Amiable
7. Angry
8. Awful
9. Blue
10. Calm
11. Cooperative
12. Cruel
13. Devoted
14. Disagreeable
15. Discouraged
16. Fearful
17. Fine
18. Forlorn
19. Frightened
20. Gay
21. Gloomy
22. Healthy
23. Hopeless
24. Kindly
25. Lonely
26. Lost
27. Low
28. Mad
29. Merry
30. Miserable
31. Nervous
32. Panicky
33. Polite
34. Rejected
35. Shaky
36. Suffering
37. Sunk
38. Sympathetic
39. Tender
40. Tense
41. Terrible
42. Tormented
43. Understanding
44. Unhappy
45. Upset
46. Warm
47. Wilted
48. Worrying

---

*Items 1 through 48 comprise the brief form of the Multiple Affect Adjective Checklist (Zuckerman & Lubin, 1965) Used with permission.

RESPONDENT: ☐ Mother/Mother Figure ☐☐☐☐
☐ Father/Father Figure
☐ Other Adult ____________________
... OR ... ☐ No Father/Father Figure in Home (SKIP THIS SECTION)

Part G. Father/Father Figure Information

> QUESTIONS ARE PHRASED FOR DIRECT INTERVIEWING. HOWEVER, ON VISIT # 1 PLEASE OBTAIN INFORMATION BY REPORT. INDICATE RESPONSENT ABOVE AND REPHRASE QUESTIONS BY REFERRING TO "SPOUSE," "HUSBAND," "PARTNER," ETC., AS APPROPRIATE. ALSO, FOR INFORMATION OBTAINED BY REPORT, INSTRUCT RESPONDENT TO TELL YOU IF SHE IS UNSURE OR DOESN'T KNOW AN ANSWER. NOTE "NS" FOR "NOT SURE" OR "DK" FOR "DON'T KNOW" WHERE THIS OCCURS. TRY TO OBTAIN OR VERIFY ANSWERS WITH FATHER/FATHER FIGURE AT ANOTHER TIME USING THIS SAME INTERVIEW FORM AND A CONTRASTING PEN OR MARKER.

I'd like to ask you some questions about your background and your lifestyle, and the way you feel about certain things. If at any time you feel a question is an invasion of your privacy, feel free not to answer it. We would rather have no answers to some questions rather than intrude.

1. When were you born? ____________________ (MONTH/DAY/YEAR)

2. I'd like you to recall when you were in school. What kind of student were you? How would you describe yourself? ____________________
____
____
____

3. What was the last grade of school you completed?

☐ 3rd ☐ 6th ☐ 9th
☐ 4th ☐ 7th ☐ 10th ☐ 12th
☐ 5th ☐ 8th ☐ 11th (GO TO Q4)

3a. Would you mind telling me why you left school? ____________________
____
____
____

4. Did you skip or repeat a grade in school?

☐ Yes ↓
☐ No (GO TO Q5)

4a. Would you mind explaining the circumstances? ____________________

____

____

5. Did your education include Kindergarten?

☐ Yes ☐ No

6. Have you had any additional education or training?

- ☐ None
- ☐ Vocational/Technical Training (Specify) ______ ________________
- ☐ Some College
- ☐ Community/Junior College Graduate
- ☐ Four Year College/University Graduate
- ☐ Some Postgraduate Study
- ☐ Advanced Degree
- ☐ Other (Specify) ________ ________________

7. Now I have a few questions to ask about your work. First, are you employed now, looking for work, retired, or what?

☐ Employed ☐ Looking ☐ Retired ☐ Househusband ☐ Other (Specify)____ ☐ Never worked (GO TO Q10)

7a. What kind of work (are/were) you doing? (For example: electrical engineer, stock clerk, farmer) (RECORD BELOW)

7b. In about what month and year did you start this job? (RECORD BELOW)

7c. What (are/were) your most important activities or duties? (For example: kept account books, filed, sold cars, operated printing press, finished concrete) (RECORD ANSWER BELOW)

7d. What kind of business or industry was this? (For example: TV and radio manufacturer, retail shoe store, State Labor Dept., farm) (RECORD BELOW)

7e. (Are/Were) you: ...An employee of a private company, business or individual for wages, salary, or commission? (CIRCLE 1 BELOW)

...A government employee? (Federal, state, county, or local government?) (CIRCLE 2 BELOW) 44

...Self-employed in own business, professional practice, or farm? IF YES, ASK: Is your own business not incorporated or farm (CIRCLE 3 BELOW) OR
Is your own business incorporated (CIRCLE 4 BELOW)

...Working without pay in a family business or farm? (CIRCLE 5 BELOW)

7f. Approximately how many hours per week (are/were) you working? (RECORD BELOW)

7g. Why did you leave your job? (RECORD BELOW)

ASK Q's a THROUGH f FOR CURRENT JOB, THEN ASK Q's a THROUGH g FOR THE TWO PREVIOUS JOBS. NOTE: IF YOU HAVE ANY REASON TO BELIEVE THAT A PAST OR CURRENT PLACE OF EMPLOYMENT POSSESSES SERIOUS HEALTH HAZARDS, PROBE: "DO/DID YOU WORK WITH OR IN A PLACE WITH CHEMICALS, X-RAYS OR HORMONES?" RECORD RESPONSE IN THE MARGINS OF THE EMPLOYMENT HISTORY PAGES.

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ________________

	7a	7b		7c	7d	7e	7f	7g
JOB	What kind of work (are/were) you doing	In about what month and year did you...		What (are/were) your most important activities?	What kind of business or industry (is/was) this?	Employment Status	About how many hours (are/were you working per week?	Why did you leave?
		Start?	Leave?					
Current Job			▨			1 2 3 4 5		▨
2						1 2 3 4 5		
3						1 2 3 4 5		

45 (INSERT)*

8. (SHOW CARD #2 FOR Q's 8 AND 9). How satisfied are you, on the whole, with the job (including house-husband) you have? (What facial expression best sums up how satisfied you are? Just tell me the number that goes with the face. (FOR REPORT ASK, "HOW SATISFIED DO YOU THINK YOUR SPOUSE/PARTNER IS WITH HIS JOB? WHAT FACIAL EXPRESSION BEST SUMS UP HOW SATISFIED YOU THINK HE IS?" CIRCLE RESPONSE)

1 2 3 4 5

9. (FOR RESPONDENT EMPLOYED OUTSIDE THE HOME) What chances do you have to advance or get a better job? Which facial expression best sums up what your chances are? Just tell me the number that goes with the face. (FOR REPORT ASK, "WHAT CHANCES DO YOU THINK YOUR SPOUSE/PARTNER HAS TO ADVANCE OR GET A BETTER JOB? WHICH FACIAL EXPRESSION BEST SUMS UP WHAT YOU THINK HIS CHANCES ARE?" CIRCLE RESPONSE)

1 2 3 4 5

---

*Use INSERT to record Father/Father Figure's employment history if also obtained directly from him.

☐☐☐☐

10. What is your current marital status, married, widowed, divorced, separated, or never married?

☐ Married ☐ Divorced ☐ Never married

☐ Widowed ☐ Separated (GO TO Q11 IF PRESENCE OF A PARTNER HAS BEEN INDICATED)

10a. In what year did this occur? ______________ (YEAR)

10b. How old were you when you first married? ______________ (YEARS)

10c. How many times have you been married? ______________ (#)

10d. How many times have you been divorced? ______________ (#)

11. (ASK IF DIRECT INTERVIEW ONLY AND IF MARRIED OR PRESENCE OF A PARTNER HAS BEEN INDICATED) The way people feel about their relationship with their spouse/partner varies. Some times are better than others. When the two of you seem to agree on things and share interests and friendship, you could say you are "in harmony." (SHOW CARD #2) Which facial expression best sums up the "harmony" of your relationship at this time? Just tell me the number that goes with the face. (CIRCLE RESPONSE)

1 2 3 4 5

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________
... OR ... ☐ No Other Adult in Home (SKIP THIS SECTION)

Part H. Other Adult Information

QUESTIONS ARE PHRASED FOR DIRECT INTERVIEWING. IF INFORMATION IS OBTAINED INDIRECTLY BY REPORT, INDICATE RESPONDENT ABOVE AND REPHRASE QUESTIONS AS APPROPRIATE. ALSO, FOR INFORMATION OBTAINED BY REPORT, INSTRUCT RESPONDENT TO TELL YOU IF HE/SHE IS UNSURE OR DOESN'T KNOW AN ANSWER. NOTE "NS" FOR "NOT SURE" OR "DK" FOR "DON'T KNOW" WHERE THIS OCCURS. TRY TO OBTAIN OR VERIFY ANSWERS WITH OTHER ADULT AT ANOTHER TIME.

1. (RECORD SEX OF RESPONDENT: ☐ Female ☐ Male)

2. When were you born? ____________________ (MONTH/DAY/YEAR)

3. I'd like you to recall when you were in school. What kind of student were you? How would you describe yourself? ____________
____
____

4. What was the last grade of school you completed?

☐ 3rd
☐ 4th
☐ 5th
☐ 6th
☐ 7th
☐ 8th
☐ 9th
☐ 10th
☐ 11th
☐ 12th (GO TO Q4)

4a. Would you mind telling me why you left school? ____________
____
____
____

5. Did you skip or repeat a grade in school?

☐ Yes ☐ No (GO TO Q6)

5a. Would you mind explaining the circumstances? ____________
____
____
____

☐☐☐☐

6. Did your education include Kindergarten?

☐ Yes ☐ No

7. Have you had any additional education or training?

- ☐ None
- ☐ Vocational/Technical Training (Specify) ____________________
- ☐ Some College
- ☐ Community/Junior College Graduate
- ☐ Four Year College/University Graduate
- ☐ Some Postgraduate Study
- ☐ Advanced Degree
- ☐ Other (Specify) ____________________

8. Now I have a few questions to ask about your work. First, are you employed now, looking for work retired, or what?

☐ Employed ☐ Looking ☐ Retired ☐ Househusband ☐ Other (Specify) ____________ ☐ Never worked (GO TO Q11)

8a. What kind of work (are/were) you doing? (For example: electrical engineer, stock clerk, farmer) (RECORD BELOW)

8b. In about what month and year did you start this job? (RECORD BELOW)

8c. What (are/were) your most important activities or duties? (For example: kept account books, filed, sold cars, operated printing press, finished concrete) (RECORD ANSWER BELOW)

8d. What kind of business or industry was this? (For example: TV and radio manufacturer, retail shoe store, State Labor Dept., farm) (RECORD BELOW)

8e. (Are/Were) you: ...An employee of a private company, business or individual for wages, salary, or commission? (CIRCLE 1 BELOW)

...A government employee? (Federal, state, county, or local government?) (CIRCLE 2 BELOW)

...Self-employed in own business, professional practice, or farm? IF YES, ASK: Is your own business not incorporated or farm (CIRCLE 3 BELOW) OR Is your own business incorporated (CIRCLE 4 BELOW)

...Working without pay in a family business or farm? (CIRCLE 5 BELOW)

8f. Approximately how many hours per week (are/were) you working? (RECORD BELOW)

8g. Why did you leave your job? (RECORD BELOW)

50

ASK Q's a THROUGH f FOR CURRENT JOB, THEN ASK Q's a THROUGH g FOR THE TWO PREVIOUS JOBS. NOTE: IF YOU HAVE ANY REASON TO BELIEVE THAT A PAST OR CURRENT PLACE OF EMPLOYMENT POSSESSES SERIOUS HEALTH HAZARDS, PROBE: "DO/DID YOU WORK WITH OR IN A PLACE WITH CHEMICALS, X-RAYS OR HORMONES?" RECORD RESPONSE IN THE MARGINS OF THE EMPLOYMENT HISTORY PAGES.

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________

☐☐☐☐

51 (INSERT)*

	8a	8b		8c	8d	8e	8f	8g
JOB	What kind of work (are/were) you doing	In about what month and year did you... Start?	Leave?	What (are/were) your most important activities?	What kind of business or industry (is/was) this?	Employment Status	About how many hours (are/were you working per week?	Why did you leave?
Current Job			▨			1 2 3 4 5		▨
2						1 2 3 4 5		
3						1 2 3 4 5		

9. (SHOW CARD #2 FOR Q's 9 AND 10) How satisfied are you, on the whole, with the job (including housekeeping) you have? What facial expression best sums up how satisfied you are? Just tell me the number that goes with the face. (FOR REPORT, ASK, "HOW SATISFIED DO YOU THING (OTHER ADULT'S NAME) IS WITH HIS/HER JOB? WHAT FACIAL EXPRESSION BEST SUMS UP HOW SATISFIED YOU THINK HE/SHE IS?" CIRCLE RESPONSE)

1 2 3 4 5

10. (FOR RESPONDENT EMPLOYED OUTSIDE THE HOME) What chances do you have to advance or get a better job? Which facial expression best sums up what your chances are? (FOR REPORT ASK, "WHAT CHANCES DO YOU THINK (OTHER ADULT'S NAME) HAS TO ADVANCE OR GET A BETTER JOB? WHICH FACIAL EXPRESSION BEST SUMS UP WHAT YOU THINK HIS/HER CHANCES ARE? CIRCLE RESPONSE)

1 2 3 4 5

---

*Use INSERT to record Other Adult's employment history if also obtained directly from him/her.

☐☐☐☐

11. What is your current marital status, married, widowed, divorced, separated, or never married?

☐ Married ☐ Divorced ☐ Never married

☐ Widowed ☐ Separated (GO TO Q12 IF PRESENCE OF A PARTNER HAS BEEN INDICATED)

11a. In what year did this happen? ________________(YEAR)

11b. How old were you when you first married? __________(YEARS)

11c. How many times have you been married? ___________(#)

11d. How many times have you been divorced? ___________(#)

12. (ASK IF DIRECT INTERVIEW ONLY) The way people feel about their relationship with those they live with varies. Some times are better than others. When you both seem to agree on things and share interests and friendship, you could say you are "in harmony." (SHOW CARD #2) Which facial expression best sums up the "harmony" of your relationship at this time. Just tell me the number that goes with the face. (CIRCLE RESPONSE)

1 2 3 4 5

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

☐☐☐☐

Part I. Background Information

Now I'd like to ask you some background questions. Sometimes background information can be helpful in understanding more important concerns. If at anytime you feel a question is an invasion of your privacy, feel free not to answer it. We would prefer to have no answers to some questions rather than intrude. (IF RESPONSENT REFUSES TO ANSWER A QUESTION, ENTER "NR" IN THE SPACE)

1. First, could you tell me about how many times you moved in the last 3 years? _________(#)

2. About how many years have you lived in this home?

   ☐ # Years ☐ All my life (GO TO Q6)

3. How long have you lived in this neighborhood?

   ☐ # Years ☐ All my life (GO TO Q6)

4. How long have you lived in this town?

   ☐ # Years ☐ All my life (GO TO Q6)

5. Before you moved to this town, where did you live?

   ________________ ________________ ________________
   CITY STATE COUNTY

6. Do you rent or own this home?

   ☐ Rent ☐ Own

7. How many rooms are there in this home, not counting bathrooms, utility rooms, porches, or half-rooms (i.e., rooms unsuitable for sleeping or general living purposes)? ____________________(#)

8. How would you describe your household, crowded and it is difficult to find a place to be alone, crowded but one can usually find a place to be alone, or enough space for everybody?

   ☐ Crowded and it is difficult to find a place to be alone ☐ Crowded but one can usually find a place to be alone ☐ Enough space for everybody

9. I'd like to ask you about some things you may or may not have. Would you mind telling me which of the following things you have? (FOR EACH ITEM RESPONDENT HAS ASK, "HOW MANY?")

	Yes	No	Number	
Television	[ ]	[ ]	_____	
Radio	[ ]	[ ]	_____	
Record player, stereo	[ ]	[ ]	_____	(count once per system)
Telephone	[ ]	[ ]	_____	
Encyclopedia	[ ]	[ ]	_____	
Dictionary	[ ]	[ ]	_____	
Car	[ ]	[ ]	_____	

10. What is your religious preference, if any?

☐ Lutheran
☐ Other Protestant
☐ Catholic
☐ Jewish
☐ Other Preference (Specify) _______
☐ No Preference (GO TO Q11)

10a. How often do you attend church-related activities other than religious services?

☐ Once a week
☐ Once a month
☐ A few times a year
☐ At least once a year
☐ Less than once a year
☐ Never

11. Do you have any strong ties with any racial or ethnic group? (RECORD RESPONSE) ________________________________

11a. Race of respondent as determined through observation:

☐ White American
☐ Afro American
☐ Native American
☐ Spanish American
☐ Asian American
☐ Other (Specify) _______

12. (ASK IF FATHER/FATHER FIGURE IS PRESENT IN HOME) Does your husband/partner have any strong ties with any racial or ethnic group? (RECORD RESPONSE) ________________________________

12a. Race of father/father figure as determined through observation:

☐ White American
☐ Afro American
☐ Native American
☐ Spanish American
☐ Asian American
☐ Other (Specify) _______

☐☐☐☐

13. (IF NECESSARY ASK) What language is usually spoken in your home?

☐ English ☐ Spanish ☐ Other (Specify) ____________

14. Did you vote in the 1980 election (The one between Carter and Reagan)?

☐ Yes ☐ No

15. It would be helpful to know if people with different financial resources have different concerns. If you turn to Page 6 of your booklet you'll see four boxes. In the top box, please mark the box for the figure that comes closest to your present yearly family income before taxes. This figure should include salaries, pensions, and all other incomes. If you are not sure, please indicate your best guess.

16. The common sources of family income are listed in the box below family income. They are: (READ ALOUD)

- Mother's Job
- Father's Job
- Other Adult's Job
- Unemployment Benefits
- Worker's Compensation
- Social Security Disability Benefits
- County Welfare Benefits
- Pensions
- Aid to Families With Dependent Children
- Supplemental Security Income
- Other Sources

Please mark the box or boxes that represent your family's sources of income. (WAIT WHILE RESPONDENT MARKS BOXES THEN ASK) Now I'd like you to circle the source of income that is most important... the source that contributes most to your total family income.

17. In the next box down are five facial expressions. The facial expressions range from very bad or dissatisfied to very good. Put an "X" on the facial expression that best sums up your current financial situation.

18. I have one final question about your family resources. Where there any times during the last 12 months when you or your family had trouble getting the basic necessities such as food, clothing, housing, or health care? Please mark the box for either "Yes" or "No" at the bottom of the page.

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ______________________

☐☐☐☐

Part J. Language*

TO CONDUCT THIS PART OF THE SURVEY INTERVIEW, THE INTERVIEWER MUST BE THOROUGHLY FAMILIAR WITH PEABODY PICTURE VOCABULARY TEST - REVISED (PPVT-R) MANUAL AND TEST MATERIALS. YOU WILL NEED PPVT-R FORM L SERIES OF PLATES AND A PPVT-R ANSWER FORM (ONE FORM FOR EACH RESPONDENT) TO PROCEED WITH PART G.

One of the things we're interested in knowing more about is language...the language or words parents and children use to communicate. Pictures are one way of understanding more about the words people use to communicate. I'd like to have you look at some pictures and tell me what they mean to you. We show these pictures to all the children and adults we interview.

TURN TO TRAINING PLATE D.

As you can see there are four pictures on this page. Each of them is numbered.

INDICATE BY POINTING TO AND NUMBERING EACH IN TURN -- 1, 2, 3, AND 4.

I will say a word; then I want you to tell me the number of, or point to, the picture that best tells the meaning of the word. Let's try one. Tell me the number of, or point to, the picture which best tells the meaning of "wheel."

IF THE RESPONDENT MAKES THE DESIRED RESPONSE, TURN TO TRAINING PLATE E. IF THE RESPONDENT CHOOSES THE WRONG ILLUSTRATION, GIVE THE CORRECT CHOICE, EXPLAIN WHY IT IS CORRECT, AND GO TO TRAINING PLATE E.

That's fine. Now, what number is "giant?"

IF THE RESPONDENT MAKES THE DESIRED RESPONSE, TURN TO THE CORRECT STARTING POINT PLATE. IF RESPONDENT CHOOSES THE WRONG ILLUSTRATION, GIVE THE CORRECT CHOICE, EXPLAIN WHY IT IS CORRECT, AND GO ON TO THE NEXT PLATE. OCCASIONALLY, IT MAY BE NECESSARY TO ADMINISTER ADDITIONAL SERIES OF PRACTICE WORDS IN ORDER TO ESTABLISH THE DESIRED RESPONSE PATTERN (*SEE BOX BELOW). IN SUCH CASES, USE AS MANY OF THE ALTERNATE PRACTICE WORDS AS NEEDED, UNTIL THE RESPONDENT CORRECTLY CHOOSES TWO CONSECUTIVE WORDS WITHOUT YOUR HELP. THEN TURN TO THE CORRECT STARTING POINT PLATE AND CONTINUE WITH DIRECTIONS BELOW.

---

*Directions for administering the PPVT-R have been quoted directly from the Peabody Picture Vocabulary Test-Revised-Manual, pp. 15-16 (Dunn & Dunn, 1981). Manual and materials can be purchased from American Guidance Service, Circle Pine, MN.

Fine! Now I'm going to show you some other pictures. Each time I say a word, you say the number of, or point to, the picture which best tells the meaning of the word. As we go through the book you may not be sure you know the meaning of some of the words, but look carefully at all of the pictures anyway and choose the one you think is right. What number is (STARTING POINT WORD)?

CONTINUE TEST ADMINISTRATION ACCORDING TO THE PROCEDURES PRESENTED IN THE PPVT-R MANUAL.

NOTE: STARTING THE PPVT-R WITH ITEM 110, "ARCHERY," MAY BE TOO DIFFICULT FOR SOME INDIVIDUALS, PARTICULARLY SOMEONE WHO DID NOT FINISH HIGH SCHOOL. YOU CAN USE THE FOLLOWING AS A GENERAL GUIDE: ADD 5 TO THE LAST YEAR OF SCHOOL COMPLETED AND START TESTING WITH THE ITEM CORRESPONDING TO THE SUM, i.e., THE SUM BECOMES AN APPROXIMATE AGE LEVEL FOR THE PERSON'S VOCABULARLY SKILLS. FOR EXAMPLE, FOR A PERSON WHO FINISHED THE 10TH GRADE, ADD 5 TO GET A SUM (AGE) OF 15 AND START TESTING AT ITEM 105, "CONTEMPORARY." IN GENERAL, START WITH AN EASIER ITEM IF YOU HAVE REASON TO BELIEVE THE PERSON WILL HAVE DIFFICULTY ESTABLISHING A BASAL.

RESPONDENTS: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

☐☐☐☐

Part J. Language (Continued)

Transfer information and scores from the PPVT-R Answer Form to the appropriate blanks below.

Date of Test: ____________________

Date of Birth: ____________________

Chronological Age: ____________________

Raw Score: ____________________

Standard Score: ____________________

Age Equivalent: ____________________

Grade Equivalent: ____________________

Percentile: ____________________

RESPONDENTS: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ______________________

☐☐☐☐

Part J. Language (Continued)

Transfer information and scores from the PPVT-R Answer Form to the appropriate blanks below.

Date of Test: ______________________

Date of Birth: ______________________

Chronological Age: ______________________

Raw Score: ______________________

Standard Score: ______________________

Age Equivalent: ______________________

Grade Equivalent: ______________________

Percentile: ______________________

RESPONDENTS: ☐ Mother/Mother Figure ☐ ☐ ☐ ☐
☐ Father/Father Figure
☐ Other Adult ____________________

Part J. Language (Continued)

Transfer information and scores from the PPVT-R Answer Form to the appropriate blanks below.

Date of Test: ____________________

Date of Birth: ____________________

Chronological Age: ____________________

Raw Score: ____________________

Standard Score: ____________________

Age Equivalent: ____________________

Grade Equivalent: ____________________

Percentile: ____________________

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

☐☐☐☐

Part K. Family and Friends

Now I'd like to ask you some questions about your relationships with family and friends. Please turn to Pages 7 and 8 in your booklet.

Task #1

Each numbered box on these pages represents people you feel close to and that you know well. I'll be asking you questions about these people but I am not interested in their names, only how you feel about them. Write down the initials of the people that you feel close to and that you know well. You may fill in as many or as few boxes as you want. (IF RESPONDENT DOES NOT WANT TO WRITE DOWN INITIALS, THEY MAY REFER TO THE PERSON BY THE NUMBER NEXT TO THE BOX OR USE SOME OTHER METHOD, E.G., NICKNAME. INITIALS ARE SOLELY FOR THEIR CONVENIENCE IN RECALLING THE PERSON FOR LATER QUESTIONS. WAIT WHILE RESPONDENT LISTS UP TO 10 PEOPLE.)

Task #2

Next to each person's initials is a box (POINT) for marking whether the person is a friend (not kin) or relative (kin). For each person, circle "R" if the person is a relative or "F" if the person is a friend. (WAIT WHILE RESPONDENT CIRCLES RELATIONSHIP.)

Task #3

Now I'd like you to mark about how often you've either seen or talked to this person in the last month, including talking on the phone. There are four choices. If you haven't seen or talked to them in the last month, circle "zero." The other choices are "one-to-three" times, "four-to-six" times, or "seven-or-more" times. Circle the one that is about the number of contacts you've had with each person. (LETTERS DO NOT COUNT. WAIT WHILE RESPONDENT CIRCLES NUMBER OF CONTACTS.)

Task #4

In the long box with each person's initials are two smaller boxes with the letters A, B, C, D, and E. These letters go with the pictures on this card. (PLACE "FAMILY AND FRIENDS" PICTURE CARD IN VIEW OF RESPONDENT). These pictures illustrate four ways people are important to us and why we feel close to them. (POINT TO THE CORRESPONDING PICTURE AS YOU SAY...) A is for the picture showing people who give us emotional support, that is they help us feel better if something goes wrong or when we are feeling said. B is for the picture showing people who give us advice and help, such as advice on how to raise our children, or perhaps, lend us money when we need it. C is for the picture showing people who let us know we are special or important to them. They let us know they like our company by asking us to do things with them. D is for the picture showing people who help us learn new things and meet new people.

Within the box with each person's initials, there is a box with capital letters (POINT). Circle the letter that describes the way each person is important to you. You can circle more than one letter if it helps to better describe the person. If none of the pictures describe the person, circle E. (WAIT WHILE RESPONDENT CIRCLES LETTERS. KEEP PICTURE CARD IN FRONT OF RESPONDENT FOR THIS AND REMAINING TASKS.)

Task #5

Now that you've thought about the ways people are important to you or why you feel close to them, let's try something else. I'd like you to think about the ways YOU are important to THEM. Use the box with the small letters to describe the ways YOU are important to the people on your list (POINT). Each letter goes with the pictures on this card (POINT TO PICTURE CARD). You can circle more than one letter. If none of the pictures describe the way you feel you are important to the person, circle e. (WAIT WHILE RESPONDENT CIRCLES LETTERS.)

Task #6

There is one last thing I'd like to ask you about the people on your list. Does each person on your list know at least one other person on your list? This includes knowing them by name, appearance, or through some stronger relationship, e.g., friendship, family relation, business relation.

☐ No

☐ Yes (GO TO PART L)

6a. How many people do not know at least one other person on your list? ________ (#)

COMMENTS ____

NOTE: FROM THE QUESTIONS ABOUT MARITAL HISTORY, GENERAL DISCUSSION OR FROM INFORMATION OBTAINED IN PART K. FAMILY AND FRIENDS, THERE MAY BE REASON TO BELIEVE THAT THE PARENTS ARE RELATED. IF SO, PROBE: "ARE YOU RELATED TO YOUR HUSBAND/PARTNER? FOR EXAMPLE, IS HE YOUR COUSIN?" RECORD RESPONSES IN THE MARGINS OF THE MARITAL STATUS PAGES.

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

☐☐☐☐

Part L. Community Resources

Leisure and Recreation

We would like to learn more about the leisure activities, programs, and services available in (NAME OF TOWN). I'm going to read a list of things that may be available to children in this area (within 10 miles). Please listen to each item and tell me if it is available to your children. Then I'd like you to tell me if one or more of your children use it regularly, sometimes, or rarely. (READ EACH ITEM AND CIRCLE AVAILABILITY AS "YES," "NO," OR "DON'T KNOW." THEN CHECK (✓) USE AS STATED BY RESPONDENT. IF RESPONDENT SAYS CHILDREN "NEVER" USE ITEM, CHECK "USED RARELY.")

The first thing is...

		Available	Used Regularly	Used Sometimes	Used Rarely
1.	Nursery or Day Care Center (☐ No need)	Yes No DK	[ ]	[ ]	[ ]
2.	Summer Parks Program	Yes No DK	[ ]	[ ]	[ ]
3.	Organized Sports (baseball, softball)	Yes No DK	[ ]	[ ]	[ ]
4.	Public Park	Yes No DK	[ ]	[ ]	[ ]
5.	Camping	Yes No DK	[ ]	[ ]	[ ]
6.	Fishing	Yes No DK	[ ]	[ ]	[ ]
7.	Swimming	Yes No DK	[ ]	[ ]	[ ]
8.	Golf	Yes No DK	[ ]	[ ]	[ ]
9.	Bowling	Yes No DK	[ ]	[ ]	[ ]
10.	Horseback Riding	Yes No DK	[ ]	[ ]	[ ]
11.	Roller Skating	Yes No DK	[ ]	[ ]	[ ]
12.	Youth Hockey	Yes No DK	[ ]	[ ]	[ ]
13.	Live Theater (plays)	Yes No DK	[ ]	[ ]	[ ]
14.	Movie Theater	Yes No DK	[ ]	[ ]	[ ]
15.	Public Playground	Yes No DK	[ ]	[ ]	[ ]

Clubs and Organizations

Now I'd like to ask you about any clubs or organizations to which you may belong. Do you belong to any of the following kinds of groups? (READ EACH TYPE OF GROUP AND RECORD WHETHER OR NOT RESPONDENT BELONGS. FOR EACH TYPE OF GROUP RESPONDENT BELONGS TO ASK:)

A. What are the names of the groups to which you belong?

B. How often do you usually go to meetings of this group?

	BELONG		A.	B.
	Yes	No	Names of Groups	Frequency of Attendance
16. Religious groups or church organi- such as choir, ladies auxiliary? (Does not include church service)	☐	☐		
17. Clubs or social groups such as women's clubs, card clubs, or bowling clubs?	☐	☐		
18. Neighborhood action associated groups such as community action programs, block groups, parent councils?	☐	☐		
19. Groups which are mainly connected with children's education such as PTO or a parent advisory board?	☐	☐		
20. Political action groups such as a political party or citizens committees?	☐	☐		
21. Other groups such as job-affiliated groups, unions, study groups, etc.?	☐	☐		

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☐☐☐☐

22. Does your spouse/partner/other adult belong to any clubs or organizations?

☐ Yes ☐ No (GO TO Q 23)

22a. What are the names of the groups to which he/she belongs?

____

____

____

____

23. Do any of your children belong to any clubs or organizations such as 4-H, Girl Scouts, Boy Scouts, church groups, or any other group?

☐ Yes ☐ No (GO TO "SERVICES AND PROGRAMS")

23a. Who is this? →	23b. What is the name of the group(s)?
______________	______________
______________	______________
______________	______________
______________	______________
______________	______________
______________	______________

Services and Programs

We would also like to learn more about the programs and services offered in the community. This includes some of the services that may be offered by the business community and by the health and social service agencies.

24. If you turn to Page 9 of your booklet you will see a list of programs, human services, and other services that may be available in your community. Please put a check after the program or service if it is available to you and your family. Put another check after the program or service if you or your family have made use of it in the past 3 years. I will read each item aloud while you mark in the booklet. (IF RESPONDENT DOES NOT KNOW IF THE PROGRAM OR SERVICE IS AVAILABLE, TELL THEM TO PUT A QUESTION MARK (?) ON THE BLANK UNDER "AVAILABLE.")

☐☐☐☐

INTERVIEWER READS ITEMS WHILE RESPONDENT MARKS IN BOOKLET.

	AVAILABLE? ✓	USED? ✓
A. PROGRAMS		
1. Vocational and Adult Education Programs		
2. Center for Disabled Citizens		
3. Homemaker Programs		
4. Senior Citizen Programs		
B. HUMAN SERVICES		
1. Public Health Services		
2. Social Work Services		
3. Legal Counseling Services		
4. Personal and Family Counseling Services		
C. OTHER SERVICES		
1. Bus Service		
2. Cab Service		
3. Cable TV Service		
4. Newspaper Delivery Service		

People sometimes choose not to use some of the community programs and human services we just read, even if they need them. Since these programs and services are there to help people, it is important to know why they may not be used.

25. Have you or members of your family had any problems in getting services you felt you needed or deserved?

☐ Yes ☐ No ☐ Never Tried

(GO TO Q26)

25a. I'm going to read a list of 10 problems people have in getting help from agencies. As I read each one, tell me if you think it is a problem from your experience or from the experience of other family members. The first problem is...

	PROBLEM?	
	Yes	No
25b. Knowing my responsibilities and rights in programs from which I receive assistance.	☐	☐
25c. Understanding which programs I'm eligible for.	☐	☐
25d. Understanding questions asked on agency forms.	☐	☐
25e. People in agencies don't understand my problems.	☐	☐
25f. I can't get to the agency during the day because I work.	☐	☐
25g. Lack of consistency between agencies and programs.	☐	☐
25h. I have transportation problems getting to the agency.	☐	☐
25i. Meeting eligibility for programs because I have too many financial assets (savings, securities, property).	☐	☐
25j. Agency staff turnover resulting in poorer quality services.	☐	☐

26. Do you have any general comments about the activities, services or programs in this area? Any complaints, praise, or changes you would like to see made?

____

____

____

____

____

Probes

"How could it be improved?"

"How could it be different?"

"How would you like it to be?"

"Could you give me an example of what you mean by ______________?"

"What do you mean by ____________________________?"

"How does __________ differ from what you experience in another community or area?"

RESPONDENT: ☐ Mother/Mother Figure ☐☐☐☐
☐ Father/Father Figure
☐ Other Adult ______________

Part M. Reading/Everyday Activities in Life*

TO CONDUCT THIS PART OF THE SURVEY INTERVIEW, THE INTERVIEWED MUST BE THOROUGHLY FAMILIAR WITH THE READING/EVERYDAY ACTIVITIES IN LIFE (R/EAL) MANUAL AND TEST MATERIALS. YOU WILL NEED A R/EAL TEST BOOKLET, A R/EAL CASSETTE, AND A CASSETTE PLAYER TO PROCEED WITH PART M.

We're interested in learning more about both children's and adults' reading skills. Would you be willing to take a short reading test?

IF RESPONDENT REFUSES, GO TO PART N. IF RESPONDENT AGREES, CONTINUE WITH THE INSTRUCTIONS BELOW.

(SHOW RESPONDENT R/EAL BOOKLET, CASSETTE, AND CASSETTE PLAYER.) The R/EAL is a short adult reading test. All the information you need to understand what is to be done in taking the R/EAL is described on this cassette. (FIRST SHOW CASSETTE THEN PLACE CASSETTE IN CASSETTE PLAYER. EXPLAIN HOW TO OPERATE THE CASSETTE PLAYER SO RESPONDENT CAN COMPLETE THE TEST AT HIS/HER OWN PACE)

Now you're ready to take the R/EAL.

ALLOW RESPONDENT SUFFICIENT TIME TO COMPLETE THE TEST. BE AVAILABLE FOR POSSIBLE QUESTIONS. AFTER TEST IS COMPLETED ASK:

Do you have any comments about the reading test? ______________

---

*The R/EAL was developed by Lichtman (1972). Manual and materials can be purchased from Westwood Press, Inc., New York, NY.

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ______________________

Part N. Personal Feelings and Beliefs*

We've talked a lot about your children and family. I would like to take this time to get a better idea of how you think about certain things. If you turn to Page 10 of your booklet, you'll see questions that ask what you think, feel, and believe about different things. For each question you are to circle either "Yes" or "No" depending on how you feel.

I will read each question aloud. Please put an "X" on either "Yes" or "No" to each question in your booklet. (IF RESPONDENT ASKS THE QUESTION, "WHAT SHOULD I DO IF I CAN ANSWER BOTH YES AND NO TO QUESTION...?" ASSURE THE RESPONDENT THAT THIS IS NOT AN UNUSUAL HAPPENING AND TELL HIM/HER THAT IF IT IS A LITTLE MORE YES THAN NO, THEN ANSWER YES; IF IT IS A LITTLE MORE NO THAN YES THEN ANSWER NO.)

INTERVIEWER READS ITEMS WHILE RESPONDENT MARKS IN BOOKLET.

The first question is:

1. Do you believe that most problems will solve themselves if you just don't fool with them?
2. Do you believe that you can stop yourself from catching a cold?
3. Are some people just born lucky?
4. While in school, most of the time did you feel that getting good grades meant a great deal to you?
5. Are you often blamed for things that just aren't your fault?
6. Do you believe that if a student studies hard enough he or she can pass any subject?
7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?
8. Do you feel that if things start out well in the morning it's going to be a good day no matter what you do?
9. Do you feel that most of the time parents listen to what their children have to say?
10. Do you believe that wishing can make good things happen?
11. When people criticize or deal harshly with you, does it usually seem it's for no good reason at all?

---

*Items 1 through 40 comprise the Locus of Control Scale for Adults (Nowicki & Duke, 1974). Manual and materials can be obtained from Stephen Nowicki, Jr., Dept, of Psychology, Emory University, Atlanta, GA.

12. Most of the time do you find it hard to change a friend's (mind) opinion?

13. Do you think that cheering more than luck helps a team to win?

14. Did you feel that it was nearly impossible to change your parent's mind about anything?

15. Do you believe that parents should allow children to make most of their own decisions?

16. Do you feel that when you do something wrong there's very little you can do to make it right?

17. Do you believe that most people are just born good at sports?

18. Are most of the other people your age stronger than you are?

19. Do you feel that one of the best ways to handle most problems is just not to think about them?

20. Do you feel that you have a lot of choice in deciding who your friends are?

21. If you find a four leaf clover, do you believe it might bring you good luck?

22. While in school did you often feel that whether or not you did your homework had much to do with what kind of grades you got?

23. Do you feel that when a person your age is angry at you, there's little you can do to stop him or her?

24. Have you ever had a good luck charm?

25. Do you believe that whether or not people like you depends on how you act?

26. Did your parents usually help you if you asked them to?

27. Have you felt that when people were angry with you it was usually for no reason at all?

28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today?

29. Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?

30. Do you think people can get their own way if they just keep trying?

31. Most of the time do you find it useless to try to get your own way at home?

32. Do you feel that when good things happen they happen because of hard work?

33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?

34. Do you feel that it's easy to get friends to do what you want them to do?

35. Did you usually feel that you had little to say about what you had for meals at home?

36. Do you feel that when someone doesn't like you there's little you can do about it?

37. Did you usually feel that it was almost useless to try in school because most other children were just plain smarter than you were?

38. Are you the kind of person who believes that planning ahead makes things turn out better?

39. Most of the time, do you feel that you have little to say about what your family decides to do?

40. Do you think it's better to be smart than to be lucky?

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

Part O. Problem-Solving Task*

TO CONDUCT THIS PART OF THE INTERVIEW, THE INTERVIEWER MUST BE THOROUGHLY FAMILIAR WITH THE MATCHING FAMILIAR FIGURES TEST (MFFT) INSTRUCTIONS AND TEST MATERIALS. YOU WILL NEED THE MFFT SERIES OF PLATES AND A STOPWATCH TO PROCEED WITH PART O.

Now I would like to do something with you that is a little different. Another thing we would like to learn more about is how children and adults approach problems. In some ways this task is like a game. Shall we try it?

IF RESPONDENT REFUSES, GO TO PART P. IF RESPONDENT AGREES, TURN TO PRACTICE PLATE A -- CUP.

I am going to show you a picture of something you know and then some pictures that look like it. You will have to point (POINT) to the picture on this bottom page that is just like the one on this top page (POINT). Let's do some for practice.

SHOW PRACTICE PLATES A -- CUP AND PRACTICE PLATE B -- RULER. HELP RESPONDENT FIND THE CORRECT ANSWER. THE NUMBERING OF THE PLATE FOR SCORING IS ILLUSTRATED BELOW. THE CORRECT ANSWER FOR PLATE A IS #4; PLATE B IS #6.

1	2	3
4	5	6

(RESPONDENT'S VIEW)

Now we are going to do some that are a little bit harder. You will see a picture on top and six pictures on the bottom. Find the one that is just like the one on top and point it out.

---

*Directions for administering the MFFT have been quoted directly from the Instructions accompanying the MFFT Picture Plates (Kagan, 1965). MFFT materials can be obtained from Jerome Kagan, Harvard University, Cambridge, MA.

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TIMING: RECORD THE AMOUNT OF TIME IT TAKES FOR THE RESPONDENT TO GIVE HIS/HER FIRST RESPONSE TO THE STIMULUS PICTURE (LATENCY). RECORD THE TIME TO THE NEAREST HALF SECOND.

RECORDING: ON THE RESPONSE FORM (1) LATENCY TO FIRST RESPONSE, (2) NUMBER (1-6) OF FIRST RESPONSE, AND (3) SUBSEQUENT RESPONSE NUMBERS IN SEQUENCY.

IF RESPONDENT IS CORRECT, PRAISE WITH WORDS LIKE "GOOD" OR "GOOD JOB." IF RESPONDENT IS WRONG, SAY "WHY DON'T YOU TRY AGAIN." FIND THE ONE THAT IS JUST LIKE THIS ONE." (POINT TO THE STIMULUS PICTURE). CONTINUE TO CODE RESPONSES (NOT TIMES) UNTIL RESPONDENT MAKES A MAXIMUM OF SIX ERRORS OR GETS THE ITEM CORRECT. AFTER SIX INCORRECT ITEMS SHOW HIM/HER THE CORRECT ANSWER.

AFTER COMPLETING THE TASK WITH THE RESPONDENT, CONTINUE FOLLOW-UP Q's 13 THROUGH 18 ONLY FOR MOTHER/MOTHER FIGURE (OR OTHER PRIMARY CARETAKER).

☐☐☐☐

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

Part O. Problem-Solving Task -- Response Form

Stimulus	First Response # (Circle if Correct)	Latency (1st Response)	Subsequent Response #'s (Circle if Correct)
Practice A Cup---------4			
Practice B Ruler-------6			
1. House------1			
2. Scissors---6			
3. Phone------3			
4. Bear-------1			
5. Tree-------2			
6. Leaf-------6			
7. Cat--------3			
8. Dress------5			
9. Giraffe----4			
10. Lamp-------5			
11. Boat-------2			
12. Cowboy-----4			

Number Correct = ☐
Total Number of Errors = ☐
Mean Number of Errors = ☐
Mean Latency = ☐

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

☐☐☐☐

Part O. Problem-Solving Task -- Response Form

Stimulus	First Response # (Circle if Correct)	Latency (1st Response)	Subsequent Response #'s (Circle if Correct)
Practice A Cup---------4			
Practice B Ruler-------6			
1. House------1			
2. Scissors---6			
3. Phone------3			
4. Bear-------1			
5. Tree-------2			
6. Leaf-------6			
7. Cat--------3			
8. Dress------5			
9. Giraffe----4			
10. Lamp-------5			
11. Boat-------2			
12. Cowboy-----4			

Number Correct = ☐
Total Number of Errors = ☐
Mean Number of Errors = ☐
Mean Latency = ☐

☐☐☐☐

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

Part O. Problem-Solving Task -- Response Form

Stimulus	First Response # (Circle if Correct)	Latency (1st Response)	Subsequent Response #'s (Circle if Correct)
Practice A Cup---------4			
Practice B Ruler-------6			
1. House------1			
2. Scissors---6			
3. Phone------3			
4. Bear-------1			
5. Tree-------2			
6. Leaf-------6			
7. Cat--------3			
8. Dress------5			
9. Giraffe----4			
10. Lamp-------5			
11. Boat-------2			
12. Cowboy-----4			

Number Correct = ☐
Total Number of Errors = ☐
Mean Number of Errors = ☐
Mean Latency = ☐

KEEP MFFT SERIES OF PLATES IN VIEW OF RESPONDENT. ASK MFFT FOLLOW-UP QUESTIONS ONLY FOR MOTHER/MOTHER FIGURE (OR OTHER PRIMARY CARETAKER).

13. Now let's talk a little about the task we just completed. Do you have any comments about this problem-solving task? ______

TURN TO PRACTICE PLATE A -- CUP

Let's say you are going to teach a child how to do this problem. You want the child to learn how to find the picture on the bottom page (POINT) that is just like the picture on the top page (POINT).

14. What is the first thing you would do? ______

15. Then what would you do? ______

16. Is there anything else you would do to help the child learn to solve a problem like this? ______________________________

17. What would you do if the child made a mistake during the teaching situation? ______________________________

18. How would you let the child know he/she has done a good job as he/she learns to solve the problem? ______________________________

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________________

☐☐☐☐

Part P. Our Family*

Since the focus of this project is to better understand families, I'd like to take this last opportunity to talk a little more about your family. On Page 13 of your booklet are some statements about families. You are to decide which of the statements are True about your family and which are False. If you think a statement is True or Mostly True of your family, put an "X" on T. If you think the statement is False or Mostly False of your family put an "X" on F.

Circle either True or False based on what your family most seems like to YOU. You need not try to figure out how other members see your family. We want YOUR impressions. I will read the statement aloud. Please put an "X" on T for True or F for False for each statement.

INTERVIEWER READS ITEMS WHILE RESPONDENT MARKS IN BOOKLET.

1. Family members really help and support one another.
2. Family members often keep their feelings to themselves.
3. We fight a lot in our family.
4. We don't do things on our own very often in our family.
5. We feel it is important to be the best at whatever you do.
6. We often talk about political and social problems.
7. We spend most weekends and evenings at home.
8. Family members attend church, synagogue, or Sunday school fairly often.
9. Activities in our family are pretty carefully planned.
10. Family members are rarely ordered around.
11. We often seem to be killing time at home.
12. We say anything we want to around home.
13. Family members rarely become openly angry.
14. In our family, we are strongly encouraged to be independent.
15. Getting ahead in life is very important in our family.
16. We rarely go to lectures, plays or concerts.

---

*Items 1 through 40 comprise the short form of the Family Environment Scale (Moos, 1974). Manual and materials can be purchased from Consulting Psychologists Press, Palo Alto, CA. Reprinted with permission.

17. Friends often come over for dinner or to visit.
18. We don't say prayers in our family.
19. We are generally very neat and orderly.
20. There are very few rules to follow in our family.
21. We put a lot of energy into what we do at home.
22. It's hard to "blow of steam" at home without upsetting somebody.
23. Family members sometimes get so angry they throw things.
24. We think things out for ourselves in our family.
25. How much money a person makes is not very important to us.
26. Learning about new and different things is very important in our family.
27. Nobody in our family is active in sports, little league, bowling, etc.
28. We often talk about the religious meaning of Christmas, Passover, or other holidays.
29. It's often hard to find things when you need them in our household.
30. There is one family member who makes most of the decisions.
31. There is a feeling of togetherness in our family.
32. We tell each other about our personal problems.
33. Family members hardly ever lose their tempers.
34. We come and go as we want to in our family.
35. We believe in competition and "may the best man win."
36. We are not that interested in cultural activities.
37. We often go to movies, sports events, camping, etc.
38. We don't believe in heaven or hell.
39. Being on time is very important in our family.
40. There are set ways of doing things at home.

I'd like to ask you a little more about some things that were just mentioned. The first few questions are about rules.

41. What kinds of rules or regulations do you have in your family? (CHECK ITEMS GIVEN BY RESPONDENT; WRITE DOWN OTHER RULES NOT LISTED.)

- ☐ Household chores
- ☐ Personal appearance of children
- ☐ Children's hours for coming in (Curfew)
- ☐ Children must let parents know where they are
- ☐ Other (Specify) ____________________
- ☐ Homework
- ☐ Watching TV
- ☐ Grades to be achieved
- ☐ no rules

42. Who makes the rules in your home?

- ☐ Mother/Mother Figure
- ☐ Father/Father Figure
- ☐ Other Adult (Specify) ____________
- ☐ Parents/Adults set rules without consulting children
- ☐ Rules made by parents/adults but children are at least consulted
- ☐ Rules mutually arrived at by children and parents
- ☐ Other (Specify) ____________

43. How are rules enforced? What happens if a rule is broken? (RECORD RESPONSE)

44. When children break rules or misbehave, parents react in different ways. Consider the following situation:

> Kathy and her brother Jim are arguing about what TV show to watch. They cannot agree on the same program and their voices get louder as they continue to argue. Jim goes to the TV and turns the channel to the program he wants to watch. Kathy throws a pillow at him, but hits the lamp instead. It shatters into pieces. You have been watching the whole time.

44a. What are all the things you might do? ______________

____

____

____

____

____

____

44b. Are there some things other parents might do? ________

____

____

____

____

44c. Which one of these things would you do? __________

____

____

____

____

44d. Why would you do that? __________________________

____

____

____

44e. What would happen then? _________________________

____

____

____

____

45. (ASK FOR TWO-PARENT/PARTNER FAMILIES ONLY.) Next, I'd like to ask you about family problem-solving. All families have disagreements but they differ in how they show it and what they do about it. Consider the following situation:

> Your grandmother is visiting and you have planned a large family dinner. Everyone in the family is to be home for dinner at 6:00 p.m. One of your children is out with his friends and arrives as you are serving dessert. Your spouse/partner insists that the child go to his room without dinner and stay there the rest of the evening. You insist that you want him to spend time with his grandmother since she's only visiting a short time.

45a. What are *all* the things you might do? ______________

____

____

____

____

____

____

45b. Are there some things other people might do? ________

____

____

____

____

____

45c. Which one of these things would you do? __________

____

____

____

____

45d. Why would you do that? ____________________

____

____

____

____

45e. What would happen then? ________________________

Now I have some questions about yourself as a parent.

46. In general, do you find being a parent easy or difficult? __________

47. What things about yourself help you to "stay on top of things?"

48. Are there things that make it hard for you to cope (e.g., day-to-day things that cause you a lot of stress)? ________________

49. (ASK FOR TWO-PARENT/PARTNER FAMILIES ONLY.) How about your spouse/partner? Is there anything about him/her that makes things easier or harder in terms of bringing up your children (e.g., special interests, abilities, personal characteristics)?

49a. Parents often have different views on how to bring up their children. What about you and your spouse/partner? Are there specific things you agree or disagree about when it comes to raising children?

50. We're coming to the end of the interview now. We've talked a lot about you, your family, the schools and the community. You've told me a great deal about your experiences as a parent in a number of areas. As you think about it now, what do you see as the most important source of help to you as a parent?

51. What do you see as the most serious problem for you as a parent?

52. Are there any comments you would like to make about any of the things we've talked about and done together?

THANK YOU!

THANK YOU!

APPENDIX J:

PARENT ANSWER BOOKLET

Parent
Answer
Booklet

2/82

FAMILY CODE: ☐☐☐☐

RESPONDENT: ☐ Mother/Mother Figure
☐ Father/Father Figure
☐ Other Adult ____________

PARENT ANSWER BOOKLET*

ALL answers will be processed by code.

NO name will be released on any form.

*Developed by Maykut, P. & Garber, H., University of Wisconsin Rehabilitation Research and Training Center, 1981.

Sample Questions
for
FAMILY ACTIVITIES

Example #1

How important is it that your children learn to swim?

Very Important __X__ : _____ : _____ : _____ : _____ Unimportant

Example #2

How important is it that your children learn to swim?

Very Important _____ : _____ : _____ : _____ : __X__ Unimportant

Example #3

How important is it that your children learn to swim?

Very Important _____ : __X__ : _____ : _____ : _____ Unimportant

Example #4

How important is it that your children learn to swim?

Very Important _____ : _____ : _____ : __X__ : _____ Unimportant

Example #5

How important is it that your children learn to swim?

Very Important _____ : _____ : __X__ : _____ : _____ Unimportant

FAMILY ACTIVITIES

1. Not counting what happens at school, how often do your children go to the library, or a museum, or some place like that.

   Once a Week _____: _____: _____: _____: _____ Less Than Once a Year

2. When your children have a chance to choose what to do around the house, how often do they choose to look at a book or magazine?

   Almost Every Day _____: _____: _____: _____: _____: Very Seldom

3. How often do you attend social gatherings (e.g., parties, dances, church activities, PTA)?

   Less Than Once a Year _____: _____: _____: _____: _____: Once a Week

4. How often do you take part in social activities in which some of the people are of different ethnic groups or races (e.g., church, parties, etc.)?

   Once a Week _____: _____: _____: _____: _____ Less Than Once a Year

5. How often do you visit someone who is not related to you?

   Almost Never _______: _______: _______: _______: _______ Almost Daily

6. How often do you visit friends who live in neighborhoods other than your own?

   Almost Daily _______: _______: _______: _______: _______ Almost Never

7. How often do you talk to your children about things they have seen on TV? (CHECK _____ IF NO TV)

   Almost Never _______: _______: _______: _______: _______ Almost Daily

8. If your children ask you a question you can't answer, how often do you try to find the answer by looking in a book?

   Never _________: _________: _________: _________: _________ Always

9. How often do your children see you reading something?

   Almost Every Day _______: _______: _______: _______: _______ Never

10. How often do your children see other adults living in the home reading something?

Almost Every Day _______: _______: _______: _______: _______ Never

11. How often do your children see you reading a novel, or some other book?

Never _______: _______: _______: _______: _______ Almost Every Day

12. How often do your children's activities include pretending "real life" adult activities, such as keeping house, working in a store, or driving a bus?

Very Often _______: _______: _______: _______: _______ Never

13. How much do you or other adults in the home talk with the children at meal time?

Not Much _______: _______: _______: _______: _______ Most of the Time

14. How much did you read to your children before they could read for themselves?

Almost Never _______: _______: _______: _______: _______ Almost Daily

15. How often do you tell your children that they have behaved well at school?

Very Often _______: _______: _______: _______: _______ Never

16. How Often do you read the newspaper?

Daily _______: _______: _______: _______: _______ Never

17. How often do your children come to you with homework problems?

Very Often _______: _______: _______: _______: _______ Never

18. How much did you help your children to recognize words or letters before they entered school?

A Great Deal _______: _______: _______: _______: _______ None

19. How often do you ask your children about what they have done in school?

Almost Never _____: _____: _____: _____: _____: Almost Every Day

☐☐☐☐

20. How often do you give your children a pat or hug or something like that when you are pleased with the way they are learning?

Very Often _______: _______: _______: _______: _______ Almost Never

21. How often do you tell friends or family about some clever thing one of your children has said?

Very Often _______: _______: _______: _______: _______ Almost Never

22. When your children go someplace with you, how likely are you to point out things which they might not have noticed before?

Very Unlikely _______: _______: _______: _______: _______ Very Likely

23. How often do you explain to your children what steps must come first, second, and so on, in doing some task?

Very Often _______: _______: _______: _______: _______ Very Seldom

4

☐☐☐☐

SELF-DESCRIPTION

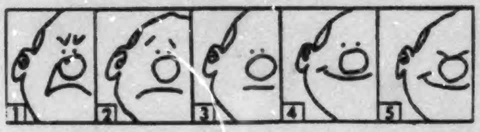
1. ☐ Active
2. ☐ Afraid
3. ☐ Agreeable
4. ☐ Alive
5. ☐ Alone
6. ☐ Amiable
7. ☐ Angry
8. ☐ Awful
9. ☐ Blue
10. ☐ Calm
11. ☐ Cooperative
12. ☐ Cruel
13. ☐ Devoted
14. ☐ Disagreeable
15. ☐ Discouraged
16. ☐ Fearful
17. ☐ Fine
18. ☐ Forlorn
19. ☐ Frightened
20. ☐ Gay
21. ☐ Gloomy
22. ☐ Healthy
23. ☐ Hopeless
24. ☐ Kindly
25. ☐ Lonely
26. ☐ Lost
27. ☐ Low
28. ☐ Mad
29. ☐ Merry
30. ☐ Miserable
31. ☐ Nervous
32. ☐ Panicky
33. ☐ Polite
34. ☐ Rejected
35. ☐ Shaky
36. ☐ Suffering
37. ☐ Sunk
38. ☐ Sympathetic
39. ☐ Tender
40. ☐ Tense
41. ☐ Terrible
42. ☐ Tormented
43. ☐ Understanding
44. ☐ Unhappy
45. ☐ Upset
46. ☐ Warm
47. ☐ Wilted
48. ☐ Worrying

5

FAMILY RESOURCES

- ☐ Less than $2,000
- ☐ $2,000 to $3,999
- ☐ $4,000 to $5,999
- ☐ $6,000 to $7,999
- ☐ $8,000 to $9,999
- ☐ $10,000 to $11,999
- ☐ $12,000 to $14,999
- ☐ $15,000 to $19,999
- ☐ $20,000 to $24,999
- ☐ $25,000 and Over

- ☐ Mother's Job
- ☐ Father's Job
- ☐ Other Adult's Job
- ☐ Unemployment Benefits
- ☐ Worker's Compensation
- ☐ Social Security Disability Benefits
- ☐ County Welfare Benefits
- ☐ Pensions
- ☐ Aid to Families With Dependent Children
- ☐ Investments
- ☐ Supplemental Security Income
- ☐ Other Sources



☐ Yes ☐ No

6

FAMILY AND FRIENDS

	INITIALS	CIRCLE	CIRCLE	CIRCLE	CIRCLE
1		R F	0 1-3 4-6 7+	A B C D E	a b c d e
2		R F	0 1-3 4-6 7+	A B C D E	a b c d e
3		R F	0 1-3 4-6 7+	A B C D E	a b c d e
4		R F	0 1-3 4-6 7+	A B C D E	a b c d e
5		R F	0 1-3 4-6 7+	A B C D E	a b c d e

7

FAMILY AND FRIENDS (Con't)

	INITIALS	CIRCLE	CIRCLE	CIRCLE	CIRCLE
6		R F	0 1-3 4-6 7+	A B C D E	a b c d e
7		R F	0 1-3 4-6 7+	A B C D E	a b c d e
8		R F	0 1-3 4-6 7+	A B C D E	a b c d e
9		R F	0 1-3 4-6 7+	A B C D E	a b c d e
10		R F	0 1-3 4-6 7+	A B C D E	a b c d e

8

COMMUNITY PROGRAMS AND SERVICES

	AVAILABLE? ✓	USED? ✓
A. PROGRAMS		
1. Vocational and Adult Education Programs	________	________
2. Center for Disabled Citizens	________	________
3. Homemaker Program	________	________
4. Senior Citizen Programs	________	________
B. HUMAN SERVICES		
1. Public Health Services	________	________
2. Social Work Services	________	________
3. Legal Counseling Services	________	________
4. Personal and Family Counseling Services	________	________
C. OTHER SERVICES		
1. Bus Service	________	________
2. Cab Service	________	________
3. Cable TV Service	________	________
4. Newspaper Delivery Service	________	________

PERSONAL FEELINGS AND BELIEFS

(PUT AN "X"
ON ANSWER)

1. YES NO Do you believe that most problems will solve themselves if you just don't fool with them?

2. YES NO Do you believe that you can stop yourself from catching a cold?

3. YES NO Are some people just born lucky?

4. YES NO While in school, most of the time did you feel that getting good grades meant a great deal to you?

5. YES NO Are you often blamed for things that just aren't your fault?

6. YES NO Do you believe that if a student studies hard enough he or she can pass any subject?

7. YES NO Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?

8. YES NO Do you feel that if things start out well in the morning it's going to be a good day no matter what you do?

9. YES NO Do you feel that most of the time parents listen to what their children have to say?

10. YES NO Do you believe that wishing can make good things happen?

11. YES NO When people criticize or deal harshly with you, does it usually seem it's for no good reason at all?

12. YES NO Most of the time do you find it hard to change a friend's (mind) opinion?

13. YES NO Do you think that cheering more than luck helps a team to win?

14. YES NO Did you feel that it was nearly impossible to change your parent's mind about anything?

15. YES NO Do you believe that parents should allow children to make most of their own decisions?

16. YES NO Do you feel that when you do something wrong there's very little you can do to make it right?

17. YES NO Do you believe that most people are just born good at sports?

18. YES NO Are most of the other people your age stronger than you are?

19. YES NO Do you feel that one of the best ways to handle most problems is just not to think about them?

20. YES NO Do you feel that you have a lot of choice in deciding who your friends are?

21. YES NO If you find a four leaf clover, do you believe it might bring you good luck?

22. YES NO While in school, did you often feel that whether or not you did your homework had much to do with what kind of grades you got?

23. YES NO Do you feel that when a person your age is angry at you, there's little you can do to stop him or her?

24. YES NO Have you ever had a good luck charm?

25. YES NO Do you believe that whether or not people like you depends on how you act?

26. YES NO Did your parents usually help you if you asked them to?

27. YES NO Have you felt that when people were angry with you it was usually for no reason at all?

28. YES NO Most of the time, do you feel that you can change what might happen tomorrow by what you do today?

29. YES NO Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?

30. YES NO Do you think people can get their own way if they just keep trying?

31. YES NO Most of the time do you find it useless to try to get your own way at home?

32. YES NO Do you feel that when good things happen they happen because of hard work?

33. YES NO Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?

34. YES NO Do you feel that it's easy to get friends to do what you want them to do?

35. YES NO Did you usually feel that you had little to say about what you have for meals at home?

36. YES NO Do you feel that when someone doesn't like you there's little you can do about it?

37. YES NO Did you usually feel that it was almost useless to try in school because most other children were just plain smarter than you were?

38. YES NO Are you the kind of person who believes that planning ahead makes things turn out better?

39. YES NO Most of the time, do you feel that you have little to say about what your family decides to do?

40. YES NO Do you think it's better to be smart than to be lucky?

OUR FAMILY

(PUT AN "X"
ON ANSWER)

1. T F Family members really help and support one another.

2. T F Family members often keep their feelings to themselves.

3. T F We fight a lot in our family.

4. T F We don't do things on our own very often in our family.

5. T F We feel it is important to be the best at whatever you do.

6. T F We often talk about political and social problems.

7. T F We spend most weekends and evenings at home.

8. T F Family members attend church, synagogue or Sunday school fairly often.

9. T F Activities in our family are pretty carefully planned.

10. T F Family members are rarely ordered around.

11. T F We often seem to be killing time at home.

12. T F We say anything we want to around home.

13. T F Family members rarely become openly angry.

14. T F In our family, we are strongly encouraged to be independent.

15. T F Getting ahead in life is very important in our family.

16. T F We rarely go to lectures, plays or concerts.

17. T F Friends often come over for dinner or to visit.

18. T F We don't say prayers in our family.

19. T F We are generally very neat and orderly.

20 T F There are very few rules to follow in our family.

21. T F We put a lot of energy into what we do at home.

22. T F It's hard to "blow off steam" at home without upsetting somebody.

23. T F Family members sometimes get so angry they throw things.

24. T F We think things out for ourselves in our family.

25. T F How much money a person makes is not very important to us.

26. T F Learning about new and different things is very important in our family.

27. T F Nobody in our family is active in sports, little league, bowling, etc.

28. T F We often talk about the religious meaning of Christmas, Passover or other holidays.

29. T F It's often hard to find things when you need them in our household.

30. T F There is one family member who makes most of the decisions.

31. T F There is a feeling of togetherness in our family.

32. T F We tell each other about our personal problems.

33. T F Family members hardly ever lose their tempers.

34. T F We come and go as we want to in our family.

35. T F We believe in competition and "may the best man win."

36. T F We are not that interested in cultural activities.

37. T F We often go to movies, sports events, camping, etc.

38. T F We don't believe in heaven or hell.

39. T F Being on time is very important in our family.

40. T F There are set ways of doing things at home.

THANK YOU!

APPENDIX K:

POST-INTERVIEW OBSERVATION FORM, SCORING INSTRUCTIONS, AND SCORING SHEET

Post-Interview Observations

2/82

☐☐☐☐

PART Q

POST-INTERVIEW OBSERVATIONS*

Do not complete until
all parts of the survey
interview schedule have
been administered.

---

*Adapted in part from the Home Quality Rating Scale (Meyers, Mink & Nihira, 1981) and the Home Observation for Measurement of the Environment (Caldwell & Bradley, 1978). Adapted and used with permission.

2/82

☐☐☐☐

INTERVIEWER ______________________________

DATE ______________________________

NUMBER OF HOME VISITS MADE BY INTERVIEWER ____(#)

LIST FAMILY MEMBERS OBSERVED DURING VISITS ___

____

Part Q. Post-Interview Observations

On the basis of the completed survey interview schedule, rate the family on the following scales. Wait until you have departed from the residence, but do the ratings promptly while the last interview is still in your mind. Please make additional comments where you feel you can increase our understanding of a particular aspect of the home. In particular, note if an aspect of the home is very different for a certain child than for children in general.

1. GROWTH PROMOTION AS A POLICY IN CHILD REARING

Evidence that respondent(s) believe a parent/caretaker should help children mature in adaption, emotion, language, cognition, etc.; evidence of achievement orientation for children vs. not helping children mature except for the convenience of the respondent(s).

5 Highly assisting of growth; implementation to help children mature; achievement orientation

4

3 Somewhat promotive of growth; some implementation; some demand for achievement

2

1 The only assistance to improve is for the convenience in caretaking; otherwise no help to mature or achieve some independence

COMMENTS: ____

____

____

____

2. DOMINANT CONTROL VS. INDULGENCE

Extent to which the parent(s)/caretaker(s) suggest, express, or exhibit control over the children in various ways vs. indulging the children, letting the children have their own way.

5 Parent(s)/caretaker(s) suggest, express, or exhibit dominance over children; set goals; make decisions

4

3 Moderate amount of control suggested, expressed, or exhibited, but children have their own way and choices to some extent

☐☐☐☐

2

1 An indulgent, children-dominated home

COMMENTS: ____________________

3. ACCEPTANCE OF CHILDREN

Extent to which parent(s)/caretaker(s) emotionally accept their children.

5 Strong attachment, deep emotional commitment (but not the overprotective love mentioned in the next item)

4

3 Affection and attachment present but without great warmth; possibly mixed feelings

2

1 No evidence of affection for children

COMMENTS: ____________________

4. MATERNAL OVERPROTECTION (IF MOTHER/MOTHER FIGURE PRESENT)

Is there overprotection (where parent/caregiver's attachment represents a potentially unwholesome interdependence)?

0 No

3 Yes, overprotection which is dominative of the children

2 Yes, mixed dominative and indulgent overprotection

1 Yes, indulgent overprotection

COMMENTS: ____________________

[/ / /]

5. REJECTION

Is any child rejected by parent(s)/caregiver(s)?

3 No

2 Possibly (Names of Children: ______________________)

1 Yes (Names of Children: ______________________)

COMMENTS: ______________________

____

____

6. COPING WITH CHILDREN

Rate parent(s)/caretaker(s) ability to cope with children (i.e., to deal with and attempt to overcome problems and difficulties). Are parent(s)/caretaker(s) successfully coping with any problems their children may be having? Or were they overwhelmed by the problems their children are having?

5 Exceptionally good coping. Parent(s)/caretaker(s) successful in handling both the children and any problems

4 Good coping. On the whole, parent(s)/caretaker(s) competent in handling children and problems

3 Fair coping. Problems caused or developed by children are eventually handled, but only after disruption

2 Poor coping. Attempts made to deal with children and problems but with little success

1 No coping. Chaos. Parent(s)/Caretaker(s) disorganized and unable to deal with children and problems

COMMENTS: ______________________

____

____

7. ADJUSTMENT OF HOME

Rate the general internal adjustment of the family as a whole in its day-by-day relationships. Was the home atmosphere characterized by satisfaction and stability, or by frustration, unpleasantness, and insecurity?

5 Exceedingly well-adjusted. Characterized by pleasant cooperation, security, and full satisfaction throughout

☐☐☐☐

4 Fundamentally sound adjustment, minor conflicts here and there

3 Smooth on surface, underlying tension

2 Definite evidence of mild maladjustment throughout

1 Dominated by maladjustment, coloring most of the activities

COMMENTS: ____

____

____

8: HARMONY IN THE HOME

Rate the extent to which the home surrounded the children with an atmosphere of overt conflict, discord vs. compliance. Was the home atmosphere marked by unpleasant discord among individuals? Or were interpersonal relationships of the household [illegible]ily harmonious, friendly and agreeable?

5 Peaceful, harmonious, agreeable atmosphere reigns

4 Tolerant, friendly. Arguments tend to be good-natured

3 Harmonious basic relationships, perhaps overlaid with some surface contention, bickering and teasing

2 Underlying discords often break through the general surface harmony as sharp arguments, or ill-natured sarcasm

1 Household flies into vindictive recriminations, bitter disputes on slightest provocation

COMMENTS: ____

____

____

9. RELATIONSHIP BETWEEN CHILDREN'S PARENTS OR CARETAKERS

Stable, non-legal unions are counted as marriage. Rate the relationship (marital adjustment) of the respondent.

0 Not applicable, e.g., single parents who have never married or never established the relationship

5 Good adjustment. Warm, positive feeling, shared interests and activities

4 Adequate adjustment. Willing and able to discuss differences

3 Stresses contained within the marriage

2 Open conflict. Marriage sustained by social pressure, economic necessity, etc.

1 Broken marriage. Divorced, separated

COMMENTS: ______________________________

____

____

10. CHILDREN'S INFLUENCE ON MARRIAGE

Rate the influence of the children on the relationship between their parents or caretakers. Has it been good? Or has it been bad? In the extreme case, marriage has broken up or is near breaking up because of tensions generated by children.

0 Not applicable. (Not presently married, or living with someone)

5 Very good. Children have brought parents much closer, produced more cohesive marriage.

4. Good.

3. Fair. Neither a good nor a bad influence.

2 Bad. Children's presence and problems cause some tension in marriage.

1 Very Bad. Children's presence and problems are major source of tension in marriage. Marriage in trouble.

COMMENTS: ______________________________

____

____

11. SIBLINGS

Rate the support children provide another, e.g., helping with home[illegible] playing together, caring for each other in the absence of parent.

0 Not applicable; no sibling

5 Children go out of their way to assist each other in important ways--physically, emotionally, etc.

4 Children support and help each other. Accept each other

3 Children accept each other but give no special support or love

2 Children barely tolerate each other

1 Children resent each other and make things difficult for each other

COMMENTS: ____

____

____

12. PRIMARY CAREGIVER

Who is the primary caregiver for the children?

0 Unknown

7 Mother or mother-figure

6 Father or father-figure

5 Mother-father figures share equally

4 Housekeeper or sitter who is there much or has children at own home much

3 Grandparent or other adult relative

2 Sibling or other child 18 or younger who lives there

1 Other (specify: ______________________)

COMMENTS: ____

____

____

13 SECONDARY CAREGIVER

Is there a secondary caregiver of significance (more than occasionally good care by a sibling, housekeeper, sitter, etc.); that is, someone who truly shares responsibility and influence?

0 No secondary caregiver

7 Mother or mother-figure

6 Father or father-figure

5 Mother-father figures share equally

4 Housekeeper or sitter who is there much or has children at own home much

☐☐☐☐

3 Grandparent or other adult relative

2 Sibling or other child 18 or younger who lives there

1 Other (Specify: ______________________________)

COMMENTS: ______________________________

____

____

14. SIGNIFICANCE OF SECONDARY CAREGIVER

Indicate the significance of secondary caregiver:

0 Not applicable; no secondary caregiver

4 Coordinated, consistent in philosophy with that of the primary caregiver

3 Different, but not discordant

2 Discordant, competitive (as with parents or guardians who are in conflict over the care)

1 Unable to tell

COMMENTS: ______________________________

____

____

15. ROLE OF FATHER OR FATHER-FIGURE

Answer for actual father or any male adult who may provide father-type masculine input, as judged from all information and observation.

0 There is no evidence of adult masculine influence; the child seems to be lacking this

4 Yes, there is a father or male figure who is around enough to share in the caregiving

3 Yes, a father or male figure does not help with everyday care, but plays with, takes out for games or to picnics, etc.

2 Yes, but role limited to discipline

1 Other masculine role. Explain: ______________________________

____

☐☐☐☐

COMMENTS: ______________________________

____

____

16. SAFETY AND OTHER QUALITIES OF THE ENVIRONMENT

Dwelling is physically:

5 Sound

4 Not well kept up

3 Deteriorating

2 Dilapidated

1 Can't tell

COMMENTS: ______________________________

____

____

17. SAFETY OF DWELLING

In terms of safety for a growing, dependent child, the dwelling may be considered:

5 Unusually safe and protective for a child

4

3 As safe as the average child's residence

2

1 Dangerous (broken steps, falling plaster, rodents, etc.)

COMMENTS: ______________________________

____

____

18. SAFETY OF STREET, OUTDOOR PLAY SPACE

5 Unusually safe, protective outdoor play space for a child

4

☐☐☐☐

3 As safe as the average child's play space outdoors

2

1 Dangerous; or no play space available outdoors

COMMENTS: ____

____

____

19. INTERIOR QUALITY FOR CHILD REARING

How would you describe the interior (including halls, porches, etc.) as a place to raise children?

4 Immaculate, spotless, all things in their places, probably not conducive to children's play

3 Clean, safe, etc., but suitable for children; children's things in evidence

2 Untidy, messy, disorderly, ordorous, perhaps unsanitary for children

1 Other (Describe: ______________________________)

COMMENTS: ____

____

____

20. THE STREET ON WHICH THE RESPONDENT LIVES IS:

7 Mainly residential

6 Mixed residential and commercial

5 Mixed residential and industrial

4 Mixed commercial and industrial

3 Mixed residential, commercial, and industrial

2 Agricultural

1 Other (Describe: ____________________________________

____)

COMMENTS: ____

____

____

☐☐☐☐

21. THE NEIGHBORHOOD WHERE THE RESPONDENT LIVES IS:

6 Predominantly White American

5 Predominantly Black American

4 Predominantly Spanish American

3 Racially mixed

2 Other (Specify: ______________________)

1 Unable to tell

COMMENTS: ______________________________

____

____

22. THE NEIGHBORHOOD WHERE THE RESPONDENT LIVES IS:

3 Very quiet

2 Somewhat noisy and congested

1 Very noisy and overly congested

COMMENTS: ______________________________

____

____

23. FAMILY DWELLING:

4 Large

3 Medium size

2 Small

1 No yard (apartment, etc.)

COMMENTS: ______________________________

____

____

☐☐☐☐

24. CHARACTERISTICS OF MOTHER/MOTHER FIGURE

a. SELF-CONCEPT

Extent to which she feels she is a competent, capable person.

5 Very positive self-concept. Displays confidence and a belief in her own skills

4

3 Generally feels good about herself, but suggests or expresses some doubts and insecurities

2

1 Very negative self-concept. Strongly suggests or expresses uncertainty in her own skills

b. SOCIAL COMPETENCE

Extent to which she possesses skills that elicit from others interest and approach responses not available to a less socially appealing person.

5 Very approachable, friendly, and interesting

4

3 Pleasant, talks comfortably. Somewhat interesting

2

1 Very unapproachable, unfriendly, and uninteresting

c. COMMUNICATION SKILLS

Mother-mother figure's ability to use language to express her ideas. This includes fluency of expression, pronunciation, and vocabulary.

5 Excellent communication skills. Uses complex sentence structure and some long words in conversing. Uses correct grammar and pronunciation. Speech is distinct, clear, and audible.

4

3 Good communication skills. Able to express ideas and converse in a pleasant manner

2

1 Very poor communication skills. Best characterized by long pauses, faintness, vagueness or ambiguity, emotionless. Uses short words and phrases. Little or no eye contact

d. RESPONSES FOR SOCIAL APPROVAL

Were the respondent's replies influenced by the need for social approval so that she would appear in a favorable light? (Whether this was conscious or not is beside the point.)

4 No evidence the responses were influenced by social desirability; told enough about own problems to be convincing

3 Same as above, though not so convincing

2 Perhaps some influence of social desirability

1 Much evidence that socially desirable responses were given; tried to impress interviewer

e. RELIABILITY OF INTERVIEW RESPONSES

5 Completely or highly reliable

4 Very reliable

3 Uncertain reliability

2 Somewhat unreliable

1 Completely unreliable

Reasons for your judgement:

0 If you marked 5 or 4 above

If you marked 3, 2, or 1 above:

4 Reliability questioned because of difficulty in comprehension by interviewee, whether due to poor language, foreign language, deafness, etc.

3 If observed facts or other information contradict respondent's information in important ways, or respondent contradicted self

2 If respondent appeared harried, emotional, hostile; wished it were over, suspicious, etc.

1 Any other reason for belief in unreliability

COMMENTS: (24 a,b,c,&d)

☐☐☐☐

25. CHARACTERISTICS OF FATHER/FATHER FIGURE (☐ NO FATHER/FATHER FIGURE OR
☐ NO OPPORTUNITY TO OBSERVE. GO TO Q26)

a. SELF-CONCEPT

Extent to which he feels he is a competent, capable person.

5 Very positive self-concept. Displays confidence and a belief in his own skills

4

3 Generally feels good about himself, but suggests or expresses some doubts and insecurities

2

1 Very negative self-concept. Strongly suggests or expresses uncertainty in his own skills

b. SOCIAL COMPETENCE

Extent to which he possesses skills that elicit from others interest and approach responses not available to a less socially appealing person.

5 Very approachable, friendly, and interesting

4

3 Pleasant, talks comfortably. Somewhat interesting

2

1 Very unapproachable, unfriendly, and uninteresting

c. COMMUNICATION SKILLS

Father-father figure's ability to use language to express his ideas. This includes fluency of expression, pronunciation, and vocabulary.

5 Excellent communication skills. Uses complex sentence structure and some long words in conversing. Uses correct grammar and pronunciation. Speech is distinct, clear, and audible

4

3 Good communication skills. Able to express ideas and converse in a pleasant manner

2

1 Very poor communication skills. Best characterized by long pauses, faintness, vagueness or ambiguity, emotionless. Uses short words and phrases. Little or no eye contact

d. RESPONSES FOR SOCIAL APPROVAL

Were the respondent's replies influenced by the need for social approval so that he would appear in a favorable light? (Whether this was conscious or not is beside the point.)

4 No evidence the responses were influenced by social desirability; told enough about own problems to be convincing

3 Same as above, though not so convincing

2 Perhaps some influence of social desirability

1 Much evidence that socially desirable responses were given; tried to impress interviewer

e. RELIABILITY OF INTERVIEW RESPONSES

5 Completely or highly reliable

4 Very reliable

3 Uncertain reliability

2 Somewhat unreliable

1 Completely unreliable

Reasons for your judgement:

0 If you marked 5 or 4 above

If you marked 3, 2, or 1 above:

4 Reliability questioned because of difficulty in comprehension by interviewee, whether due to poor language, foreign language, deafness, etc.

3 If observed facts or other information contradict respondent's information in important ways, or respondent contradicted self

2 If respondent appeared harried, emotional, hostile; wished it were over, suspicious, etc.

1 Any other reason for belief in unreliability

COMMENTS: (25a,b,c,&d)

☐☐☐☐

26. CHARACTERISTICS OF OTHER ADULT (☐ NO OTHER ADULT OR ☐ NO OPPORTUNITY TO OBSERVE. GO TO Q27)

a. SELF-CONCEPT

Extent to which he/she feels he/she is a competent, capable person.

5 Very positive self-concept. Displays confidence and a belief in his/her own skills

4

3 Generally feels good about him/herself, but suggests or expresses some doubts and insecurities

2

1 Very negative self-concept. Strongly suggests or expresses uncertainty in his/her own skills.

b. SOCIAL COMPETENCE

Extent to which he/she possesses skills that elicit from others interest and approach responses not available to a less socially appealing person.

5 Very approachable, friendly, and interesting

4

3 Pleasant, talks comfortably. Somewhat interesting

2

1 Very unapproachable, unfriendly, and uninteresting

c. COMMUNICATION SKILLS

Other adult's ability to use language to express his/her ideas. This includes fluency of expression, pronunciation, and vocabulary.

5 Excellent communication skills. Uses complex sentence structure and some long words in conversing. Uses correct grammar and pronunciation. Speech is distinct, clear, and audible

4

3 Good communication skills. Able to express ideas and converse in a pleasant manner

2

1 Very poor communication skills. Best characterized by long pauses, faintness, vagueness or ambiguity, emotionless. Uses short words and phrases. Little or no eye contact

d. RESPONSES FOR SOCIAL APPROVAL

Were the respondent's replies influenced by the need for social approval so that he/she would appear in a favorable light. (Whether this was conscious or not is beside the point.)

4 No evidence the responses were influenced by social desirability; told enough about own problems to be convincing

3 Same as above, though not so convincing

2 Perhaps some influence of social desirability

1 Much evidence that socially desirable responses were given; tried to impress interviewer

e. RELIABILITY OF INTERVIEW RESPONSES

5 Completely or highly reliable

4 Very reliable

3 Uncertain reliability

2 Somewhat unreliable

1 Completely unreliable

Reasons for your judgement:

0 If you marked 5 or 4 above

If you marked 3, 2, or 1 above:

4 Reliability questioned because of difficulty in comprehension by interviewee, whether due to poor language, foreign language, deafness, etc.

3 If observed facts or other information contradict respondent's information in important ways, or respondent contradicted self

2 If respondent appeared harried, emotional, hostile; wished it were over, suspicious, etc.

1 Any other reason for belief in unreliability

COMMENTS: (26a,b,c,&d)

On the basis of your conversations and observations in the home, please check (✓) "Yes" or "No" to each of the following aspects of the physical environment. "Yes" is equivalent to "True;" the more "Yes" items, the better the physical quality of the home environment.

		Yes	No	No Opportunity To Observe
27.	House is not overly noisey--TV, shouts of children, radio, etc.	☐	☐	☐
28.	In terms of available floor space, the rooms are not overcrowded with furniture.	☐	☐	☐
29.	Furniture is not in obvious need of repair	☐	☐	☐
30.	All visible rooms of the house are reasonably clean and minimally cluttered.	☐	☐	☐
31.	There is at least 100 square feet of living space per person in the house	☐	☐	☐
32.	The interior of the house is not dark or perceptually monotonous.	☐	☐	☐
33.	Family displays children's art or craftwork somewhere in house (anything that children made).	☐	☐	☐
34.	House has at least two pictures or other type of art work on the walls.	☐	☐	☐
35.	Family has at least one house plant.	☐	☐	☐
36.	At least 10 books are present and VISIBLE in the house.	☐	☐	☐
37.	Family has use of a working stove and refrigerator.	☐	☐	☐
38.	Family has use of running water.	☐	☐	☐
39.	Family has a system for heating their house.	☐	☐	☐

Note whether any of there were made evident:

40.	Mention by caretaker(s) of dependence on, or faith in, God, doing Christ's work, strong religion, etc.?	☐	☐
41.	Mention of father/father-figure as extremely strict or arbitrary? (☐ NO FATHER/FATHER FIGURE)	☐	☐

☐☐☐☐

42. Please list any play materials or equipment that were present and VISIBLE in and around the house, such as bicycle, skates, skateboard, musical instruments, playground equipment, games, etc. ______

43. Was there anything unusual about the interview situations that you think affected respondents' answers?

☐ Yes ☐ No (GO TO Q 44)

43a. Please describe ______

44. Please make any additional comments that you think would be helpful in understanding this family. ______

THANK YOU!

POSTINTERVIEW OBSERVATIONS

SCORING INSTRUCTIONS

Enter Family ID number, number of home visits made by interviewer, and your name at the top of the scoring sheet. Rated items have been grouped into factors or clusters and factor scores can be obtained by simply adding the raw scores of the items listed under each factor. There are two exceptions to this rule: (1) nominal scale items which require dichotomization prior to the factor scoring and (2) items which allow "not applicable" or "unable to tell" responses. These particular items and special scoring instructions are listed below:

	Raw Scores	Change to
Item 9	0	1
Item 11	0	3
Item 13	1 through 7	3
Item 14	0, 1	3
Item 20	1 through 6	1
Item 20	7	2
Item 21	2 through 5	1
Item 21	1, 6	2
Items not contributing to factor scores:		
Item 2	5	1
Item 2	4	2
Item 4	0	3
Item 4	1 through 3	1
Item 10	0	3
Item 12	0 through 6	1
Item 12	7	2
Item 15	0	1
Item 15	1 through 4	2

Enter raw scores in the appropriate item blanks, paying particular attention to items (*) that require raw score changes for the raw scores listed above. If an item has not been rated by the interviewer, enter "NR" in the item blank and leave the TOTAL blank empty. Scoring for Parts P. through V. on the scoring sheet are self-explanatory.

Completed by: ______________________
No. of Home Visits Made by Interviewer: ______

Family ID ☐☐☐☐

POSTINTERVIEW OBSERVATIONS

SCORING SHEET

A. HARMONY AND QUALITY OF PARENTING

Item 1: ____
Item 3: ____
Item 5: ____
Item 6: ____
Item 7: ____
Item 8: ____
*Item 11: ____
Total: ____

B. CONCORDANCE IN SUPPORT OF CHILD CARE

*Item 9: ____
*Item 13: ____
*Item 14: ____
Total: ____

C. QUALITY OF THE RESIDENTIAL ENVIRONMENT

Item 16: ____
Item 17: ____
Item 18: ____
Item 19: ____
Total: ____

D. QUALITY OF THE RESIDENTIAL AREA

*Item 20: ____
*Item 21: ____
Item 22: ____
Item 23: ____
Total: ____

E. CHARACTERISTICS OF MOTHER/MOTHER FIGURE

Item 24a: ____
Item 24b: ____
Item 24c: ____
Total: ____

F. OPENNESS AND AWARENESS OF MOTHER/MOTHER FIGURE

Item 24d: ____
Item 24e: ____
Total: ____
Item 24e/Reason ________

G. CHARACTERISTICS OF FATHER/FATHER FIGURE

___No father/father figure
___No opportunity to observe
Item 25a: ____
Item 25b: ____
Item 25c: ____
Total: ____

H. OPENNESS AND AWARENESS OF FATHER/FATHER FIGURE

___No father/father figure
___No opportunity to observe
Item 25d: ____
Item 25e: ____
Total: ____
Item 25e/Reason ________

I. CHARACTERISTICS OF OTHER ADULT

___No other adult
___No opportunity to observe
Item 26a: ____
Item 26b: ____
Item 26c: ____
Total: ____

J. OPENNESS AND AWARENESS OF OTHER ADULT

___No other adult
___No opportunity to observe
Item 26d: ____
Item 26e: ____
Total: ____
Item 26e/Reason ________

K. DOMINANT CONTROL VS. INDULGENCE

*Item 2: ____

L. MATERNAL OVERPROTECTION

*Item 4: ____

M. CHILDREN'S INFLUENCE ON MARRIAGE

*Item 10: ____

N. PRIMARY CAREGIVER

*Item 12: ____

O. ROLE OF FATHER/FATHER FIGURE

*Item 15: ____

P. PHYSICAL ENVIRONMENT

Items 27 through 39
No. of YES ✓'s: ____
No. of NO ✓'s: ____
No. of NO OPPORTUNITY TO OBSERVE ✓'s: ____
Total ✓'s: 13

Q. RELIGIOSITY

Item 40: YES ___
NO ___

R. STRICT/ARBITRARY FATHER/FATHER FIGURE

Item 41: YES ___
NO ___

*Requires raw score changes for certain raw scores -- see Scoring Instructions

(OVER)

Completed by: ____________________ Family ID /___/___/___/___/___/
No. of Home Visits Made by Interviewer: ______

S. PLAY MATERIALS AND EQUIPMENT

Check if listed in Item 42:

___Gross motor toys and equipment, e.g., bicycles, skates, skateboard, balls
___Fine motor toys and materials, e.g., blocks, cut-outs, crayons, manipulatives, toy cars and trucks
___Games, e.g., checkers, scabble, monopoly
___Musical instruments, e.g., xylophone, drum
___Electronic games, e.g., Atari, small portable devices
___Child-size play pieces for adult role playing, e.g., play kitchen, appliances, tool box, doctor/nurse kit, dolls
___Outdoor sports equipment for children's use, e.g., fishing pole, snowmobile
___Playground equipment, e.g., swing, slide, sandbox
___Children's reading materials, e.g., storybooks, children's magazines
___Dictionary
___Encyclopedia
___Small baby toys
___Radio
___Stereo or record player
___Toys, not specified
___Other ____________________
____
____

___None observed
___No opportunity to observe
Explain: ____________________
____
____

T. ANYTHING UNUSUAL ABOUT INTERVIEW SITUATION THAT AFFECTED RESPONDENT'S ANSWERS?

Item 43: YES___ Item 43a: Situation described: YES___
NO ___ NO ___

V. ADDITIONAL COMMENTS MADE BY INTERVIEWER?

Item 44: YES___
NO ___

APPENDIX L:

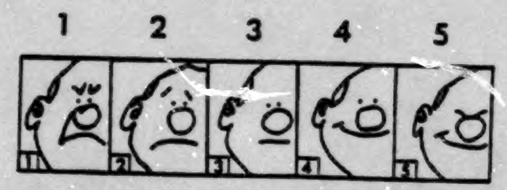
FAMILY INTERVIEW SCHEDULE CUE CARDS

A

- COLDS
- EAR INFECTIONS
- STOMACH ACHES, PAINS
- HEADACHES
- SEIZURES, CONVULSIONS
- CUTS, BRUISES FROM FALLING, ACCIDENTS
- TOO TIRED
- OTHER ?

B

- ASTHMA OR BRONCHITIS
- KIDNEY DISEASE
- DIABETES
- LOW BLOOD SUGAR
- HEART DISEASE
- CYSTIC FIBROSIS
- HIGH BLOOD SUGAR
- THYROID DISEASE
- DRUG ADDICTION
- CANCER
- ALCOHOLISM
- OTHER ?



APPENDIX M:

PSYCHOMETRIC CHARACTERISTICS OF SELECTED CHILD ASSESSMENT INSTRUMENTS

TITLE: Wechsler Preschool Primary Scale of Intelligence (1967)

AUTHOR: D. Wechsler

PUBLISHER: The Psychological Corporation, New York, New York

AGE RANGE: Ages 4 - 6 1/2 years

DESCRIPTION: The Wechsler Preschool Primary Scale of Intelligence (WPPSI) contains subtests: Information, Vocabulary, Arithmetic, Similarities, Comprehension, Picture Completion, Mazes, Block Design, Sentences, Animal House, and Geometric Designs. Scoring of the WPPSI yields a Verbal, Performance, and Full Scale Intelligence Quotients.

STANDARDIZATION: The WPPSI was standardized on 1,200 children, 100 boys and 100 girls in each of six age groups ranging by half-years from 4 to 6 1/2 years. The sample was selected to be representative of population figures from the 1960 Census. Whites and nonwhites were included in the sample according to the ratios found in the Census for four geographic regions in the United States.

RELIABILITY: Reliabilities for each of the IQ scores (VIQ, PIQ, FSIQ) range from .91 to .96 over the age range covered by the scale. Average reliability coefficients are .96 for FSIQ, .94 for VIQ, and .93 for PIQ. Satisfactory split-half FSIQ reliabilities have been reported for a variety of ethnic and exceptional child populations (Sattler, 1981). Test-retest reliabilities reliabilities (11 week interval) were reported as .86 for VIQ, .89 for PIQ, and 91 for FSIQ.

VALIDITY: **Concurrent Validity:** Comparisons of the WPPSI with Stanford-Binet (1960) norms yielded median correlations of .82 between the two scales. The WPPSI VIQ correlates more highly with the S-B (median, .81) than does the WPPSI PIQ (median, .67). Correlations between the WPPSI and WISC for children between the ages of 5 and 6 1/2 (included in both scales) range from .57 to .91 for VIQ, from .41 to .82 for PIQ, and from .54 to .90 for FSIQ (median FSIQ, .81). The WPPSI has also been correlated with other measures of mental abilities. Correlations range from .30 (Progressive Matrices) to .82 (Primary Mental Abilities Test), with a median of .64. **Predictive Validity:** A coefficient of .58 was reported between the WPPSI, FSIQ, and the Gray Oral Reading Test, administered one to three years after the WPPSI for a group of 28 white middle-class children (White & Jacobs, 1979). Pasewark, Scheer, and Sawyer (1974) reported a significant correlation between the WPPSI and the Metropolitan Achievement Tests total score (r = .58) for a sample of 30 normal 6-year-olds. Significant correlations have also been reported between WPPSI, FSIQ, and PIQ and Mathematics (MAT) for lower SES children administered the achievement test three to four years after the WPPSI (Crockett, Radin, & Pasework, 1976).

COMMENT: The WPPSI is a widely accepted and used measured of young children's intelligence functioning. It has substantial evidence of reliability and adequate evidence of validity. The WPPSI's similarity in form and content with the WISC-R and WAIS make it an especially useful measure for research examining measured intellectual functioning across a wide age range.

TITLE: Wechsler Intelligence Scale for Children-Revised (1974)

AUTHOR: D. Wechsler

PUBLISHER: The Psychological Corporation, New York, New York

AGE RANGE: Ages 6 - 0 to 16 - 11 years

DESCRIPTION: The Wechsler Intelligence Scale for Children-Revised (WISC-R) contains 12 subtests: Information, Similarities, Arithmetic, Vocabulary, Comprehension, Digit Span, Picture Completion, Picture Arrangement, Block Design, Object Assembly, Coding, and Mazes. Scores from the former six subtests contribute to a Verbal Intelligence Quotient, and scores from the latter six subtests contribute to a Performance Intelligence Quotient. A Full Scale Intelligence Quotient is also obtained from two of these 12 subtests. (Digit Span and Mazes are not included in the IQ tables.)

STANDARDIZATION: The WISC-R was standardized on 2,200 white and nonwhite American children selected to be representative of the population covered by the scale on the basis of the 1970 Census data. The sample included eleven different age groups ranging from 6 1/2 to 16 1/2 years, with 200 children in each group. This sample included nonwhites across five major ethnic minority groups in approximately the same proportions as in the U.S. population as shown by the 1970 Census data.

RELIABILITY: Each of the three IQ scales of the WISC-R has a reliability coefficient .89 or above in the standardization group over the entire range covered by the scale. Average reliability coefficients, based on the 11 age groups are .96 for FSIQ, .94 for VIQ, and .90 for PIQ. Among the three IQ scores, the FSIQ has the lowest standard error of measurement (3.19). One-month test-retest reliability was computed for a sample of 303 children from six age groups in the standardization sample. For the retest sample, the stability coefficients were .95 for FSIQ, .93 for VIQ, and .90 for PIQ.

VALIDITY: Concurrent Validity: Correlations between the WPPSI and WISC-R for children in the age range of 6-0-0 to 6-7-15 were .80 for VIQ, .80 for PIQ, and .82 for FSIQ. Similar results were reported by Rasbury, McCoy, and Perry (1977), with a FSIQ correlation of .94 between the two measures. Correlations between WISC-R and WAIS for children ages 16-0-0 to 16-11-30 were .96 for VIQ, .83 for VIQ, and .95 for FSIQ. Other studies have reported lower correlations between the WISC-R and WAIS, particularly for educably mentally retarded children (Craft & Kronenberger, 1979; Nagle & Lazarus, 1979). The WISC-R has been compared to other measures of ability, intelligence, achievement, and school grades. Median correlations among these studies range from the upper .30's to the low .80's.

COMMENT: The WISC-R, revised in 1974 from the WISC (1949) has a substantial body of research supporting its validity and reliability. It is perhpas the single most widely used measure of children's intellectual functioning used in the United States. Its wide use and acceptance support the appropriateness of its use in studies of school-age children.

TITLE: Wechsler Adult Intelligence Scale (1955)

AUTHOR: D. Wechsler

PUBLISHER: The Psychological Corporation, New York, New York

AGE RANGE: Age 16-0 years and older

DESCRIPTION: The Wechsler Adult Intelligence Scale (WAIS) contains 11 subtests: Information, Comprehension, Arithmetic, Similarities, Digit Span, Vocabulary, Digit Symbol, Picture Completion, Block Design, Picture Arrangement, and Object Assembly. Scores on these subtests yield a Verbal, Performance, and Full Scale Intelligence Quotient.

STANDARDIZATION: The Wais was standardized on a sample size of 1700 individuals age 16 - 64 years, and drawn from a wide array of urban and rural areas and representing nonwhites in proportion to their incidence shown in the 1950 Census data. The sample consisted of seven age groups, with 100-150 men and 100-150 women in each group. The sample also proportionally represented 23 major occupational groupings from the 1950 Census data.

RELIABILITY: Reliabilities for each of the three scales range from .93 to .97 for the age range covered by the WAIS. The standard errors of measurement for the three scales range from 2.60 to 3.97, with FSIQ showing the smallest standard error. Coons and Peacock (1959) found test-retest correlations for VIQ, PIQ, and FSIQ to be .98, .96, and .98 respectively. Mogell and Satz (1963) also reported a high level of test-retest reliability with correlations of .90 for VIQ, .84 for PIQ, and .93 for FSIQ. In studies of the mentally retarded, test-retest reliabilities covering a span of two to four years ranged from .71 to .92 (Rosen, Stallings, Floor, & Nowakiwska, 1968; Silverstein, 1968).

VALIDITY: **Concurrent Validity:** Studies of the relationship between the WAIS and the Stanford-Binet indicate moderate to high correlations (.40 to .83) with a median of .77. For mentally retarded individuals, the correlations have been higher, ranged from .74 to .90 (median, .75). In general, the S-B correlates more highly with WAIS VIQ than PIQ. Conry and Plant (1965) reported that average high school WAIS scores are consistently below those of college students. Kennedy, Willcutt, and Smith (1963) reported that adolescents identified as gifted in mathematics had WAIS scores higher than average high school students. Plant and Lynd (1959) reported that the WAIS predicted grades as well as the college - oriented American Council on Education Psychological Examination (ACE). **Construct Validity:** Geiser (1969) reported that the WAIS and Rorschach could classify with 92 percent accuracy the degree of pathology in a psychiatric sample.

COMMENT: The WAIS appears to have a high degree of reliability and moderate degree of validity. Its similarity to the WISC-R and WPPSI supports the usefulness of the WAIS in developmental research studies.

TITLE: Self Observation Scales (1979)

AUTHORS: A. J. Stenner and W. G. Katzenmeyer

PUBLISHER: NTS Research Corporation, Durham, California

AGE RANGE: Grades K-3 (Primary Level), grades 4-6 (Intermediate Level), grades 7-9 (Junior High Level), and grades 10-12 (Senior High Level).

DESCRIPTION: The Self Observation Scales (SOS) were designed as direct, self-report, group-administered instruments to measure the way children and adolescents perceive themselves and their relationships to peers, teachers, and school. The respondents answer each item "yes" or "no" and are instructed to report as they truly feel, not as someone might want them to feel. Four levels of the SOS are available, with empirically determined subscales:

Primary (50 items)

Self Acceptance
Self Security
Social Maturity
School Affiliation

Intermediate (60 items)

Self Acceptance
Self Security
Social Maturity
Social Confidence
School Affiliation
Teacher Affiliation
Peer Affiliation

Junior High (72 items)

Self Acceptance
Self Security
Social Confidence
Self Assertion
Peer Affiliation
Teacher Affiliation
School Affiliation

Senior High (72 items)

Self Acceptance
Self Security
Social Confidence
Self Assertion
Peer Affiliation
Teacher Affiliation
School Affiliation

High scores on each of the scales reflect a positive dimension of self concept. Scoring of the SOS is conducted by NTS Research Corporation only. The Standard scoring service provides T scores, percentiles, and stanines for each scale for each pupil, based on national norms.

STANDARDIZATION: The Primary and Intermediate Levels of the SOS were developed on a sample of over 30,000 children in grades K-6. These children were drawn from 16 school districts selected as representative of the size, SES, and geographical location of the United States. The total sample was overrepresented with minority socially disadvantaged-children and stratified random probability samples were selected to approximate the racial, SES, and geographic characteristics of the United States. The probability sample included 3,700 primary age and 4,600 intermediate age children. Norms were computed using the probability samples. Junior and Senior levels of the SOS were normed on a stratified sample of 4,800 junior and 4,900 senior high school students from a total sample of 22,000 students. The stratified random probability sample was selected to represent the racial, socioeconomic, and geographic characteristics of the United States.

RELIABILITY: One week test-retest reliabilities were computed for a sample of children at each level of the SOS. For Primary Level children (N=458), the coefficients for scales range from .79 to .91; for Intermediate Level children (N=249), .73 to .89, for Junior High Level children (N=.93), .74 to .91; and for Senior High children (N=163), .76 to .90. Spearman-Brown reliability coefficients were computed for several criterion groups (e.g., white males, black males, black females, mixed sample, etc.) and yielded coefficients ranging from .65 to .85 with a median value of .78.

VALIDITY: Construct Validity: The authors computed structural integrity matrices for the SOS scales and levels. In these analyses, each of the coefficients is interpreted as a correlation, the square of which represents the percent of structural variance on common between the criterion group (e.g., black females) and the national norm group. For the Primary and Intermediate Levels, they reported that Self Acceptance is satisfactorily replicable and invariant across sex and race. Similar replicability, invariance and constancy coefficients were reported for Social Maturity, Self Security, and School Affiliation. A structural integrity matrix was also constructed for the Intermediate SOS. The authors reported that satisfactory replicability and invariance across sex and race for Self Acceptance, Self Security, and Social Maturity. Peer Affiliation, School Affiliation, Teacher Affiliation, and Social Confidence were reported to have adequate replicability invariance, and constancy, with some notable exceptions for certain criterion groups. The authors also reported on the relationship between SOS scales and measures of intelligence and academic achievement. SOS scales have evidenced low correlations with mental test measures, and low to moderate relationships with reading achievement.

COMMENT: The SOS appears to have high reliability and some evidence of validity. Advantages of the SOS include the use of multiple scales of self concept, equivalent forms across age groups, and a format suitable for group administration.

TITLE: Health Resources Inventory (1976) (Social Competency Rating Scale)

AUTHOR: E. L. Gesten

PUBLISHER: American Psychological Association, Arlington, Virginia

AGE RANGE: Children in the primary grades

DESCRIPTION: The Health Resources Inventory (HRI), retitled the Social Competency Rating Scale in the present study, is a teacher rating scale of children's school-related personal and social competencies. The HRI is made up to 54 items designed to assess several competence-related dimensions including self-concept, affective expression, classroom response, motivation, interpersonal skills, achievement, and socialization. Teachers are to rate all HRI items according to how well they describe children on a 5-point scale from not at all (1) to very well (5). Factor analysis of the HRI revealed five factors: good student, gutsy, peer sociability, rules, and frustration. A sum factors score, a composite index of competence, can be computed by summing the five individual factor scores.

STANDARDIZATION: The HRI was developed on a sample of 65 teacher raters drawn from 12 schools located in or adjacent to Rochester, New York. Teachers were randomly assigned one of two tasks: (a) to complete HRIs for 15 randomly selected children from their class roster or (b) to complete HRIs and a symptom scale, the Classroom Activity Rating Scale (CARS) for six children. The teacher ratings were completed midyear, by which time teachers had 3-5 months of contact with children. There were 592 subjects in the normative sample including 311 boys, 281 girls; 300 city children, 292 country children; 237 first graders, 197 second graders, and 158 third graders. There were significant SES differences between city and country samples, favoring country residents. Chi square tests for sex, grade, and residence were all nonsignificant.

RELIABILITY: Reliability was tested in the standardization sample by having 11 of the 65 teachers do a second HRI of six randomly selected students 4-6 weeks after the initial rating. With attrition, a reliability sample of 60 first to third graders was obtained. Test-retest reliabilities were as follows: sum factors = .87, good student = .83, gutsy = .77, peer sociability = .72, rules = .91, and frustration tolerance = .87.

VALIDITY: Concurrent Validity: The authors reported correlations between HRI and CARS factor scores for 183 children who were rated on both measures. Twenty-nine of the 30 correlations computed were significant (correlations ranging from -.22 to -.81). The negative correlations indicated the inverse relationship between competence and pathology. The highest correlation was between the summary scores of the two measures (-.81). The three most highly related variable pairs were (a) HRI rules and CARS acting out (-.80), (b) HRI good student and CARS learning (-.79), and (c) HRI frustration tolerance and CARS shy anxious (-.70). Construct Validity: The authors compared HRI scores of a clinically disturbed group of children to those of the normal sample. On all six scores of the HRI, the normative sample had significantly higher HRI scores. Further analysis of HRI scores within the normative sample indicated its ability to discriminate between levels of competence within this group. The HRI discriminated between most and least competent teacher-identified children and also between both extreme groups and midcompetent children.

COMMENT: The HRI appears to be a carefully developed teacher rating instrument with adequate reliability and validity. Little teacher time would be needed to complete the HRI, yet the instrument appears to offer a great deal of information about children's school-relevant personal and social skills. The usefulness of the HRI with older school children has not been explored, but item content suggests its appropriateness with a wider age range.

TITLE: Woodcock-Johnson Psychoeducational Battery, Part 2: Tests of Achievement (1977)

AUTHORS: R. W. Woodcock and M. B. Johnson

PUBLISHER: Teaching Resources, Hingham, Massachusetts

AGE RANGE: Age 3 years through adult

DESCRIPTION: The Woodcock-Johnson Psychoeducational Battery is a set of individually administered, standardized tests that were designed to measure cognitive development, scholastic aptitude, achievement, and interests. Part 2 of the battery contains 10 subtests for measuring achievement in reading, mathematics, written language, and knowledge. Single subtests or clusters of subtests may be administered to meet specific assessment needs. For example, the reading cluster of subtests includes letter-word identification, word attack, and passage comprehension. The mathematics cluster of subtests includes calculation and applied problems. The same set of subtests in the battery are administered to all school-age and older subjects. A full range of scores may be derived from the raw scores, including grade scores, age scores, percentile ranks, standard scores, relative performance index (RPI), normal curve equivalents, suggested instructional ranges, and the 90% ranges of expected achievement. A cluster difference score may also be obtained by comparing the subject's obtained subtest cluster score to his expected cluster score for age or grade (average cluster scores for age and grade are provided in the manual).

STANDARDIZATION: Normative data for the Woodcock-Johnson was gathered from 4,732 subjects in 49 communities widely distributed throughout the United States. The norming sample extended from age 3 to adults 80 years and older. About 3,900 subjects constituted the school sample (K-12). The norming sample was stratified for sex, race, occupational status, geographic region, and type of community, based on 1970 Census data. To further achieve accurate norms for the U.S. population, an individual subject weighting was executed during analysis. Norm tables for grade equivalent scores, age equivalent scores, percentile rank, and expected grade score and range are provided in the manual.

RELIABILITY: Woodcock (1978) reports reliabilities from the standardization sample for subtests and cluster scores. Median split-half reliabilities (Spearman-Brown correction) across age groups for selected subtests were: letter-word identification (.95), word attack (.92), passage comprehension (.86), calculation (.89), and applied problems (.85). The reliability of the cluster scores was reported as the average subtest reliability for each cluster. The median cluster reliability coefficients across age groups for the reading subtest cluster was .96 and for the mathematics subtest cluster, .92. The reading and mathematics cluster score intercorrelations for the standardization sample ranged from .44 (kindergarten) to .65 (grade 12) for school-age children.

VALIDITY: Concurrent Validity: Woodcock (1978) summarizes the many studies that have compared the battery with other measures. Concurrent validity coefficients for the W-J reading tests and other measures were: grade 3 sample, W-J correlated .81 with Iowa Total Reading, .91 with PIAT Reading, .89 with Wide Range Achievement Test Reading, and .92 with Woodcock Reading Mastery Test; grade 5 sample, W-J correlated .76 with Iowa, .75 with PIAT, .84 with WRAT, and .87 with WRMT; for grade 12 sample, W-J correlated .86 with PIAT, .90 with WRAT, and .90 with WRMT. Correlations between W-J mathematics tests and other measures were also reported; for grade 3 sample, W-J correlated .62 with Iowa Math, .82 with Key Math, .70 with PIAT Math, and .46 with WRAT; for grade 5 sample, W-J correlated .77 with Iowa, .80 with Key Math, .69 with PIAT, and .78 with WRAT; for grade 12 sample, W-J correlated .71 with Iowa, .74 with PIAT, and .81 with WRAT. The W-J achievement cluster scores were compared to scores on other measures administered to a sample of children with severe learning disabilities. W-J reading cluster scores correlated .55 to .84 with PIAT and WRAT reading subtests; for W-J math, correlations ranged from .36 to .77 for PIAT and WRAT math subtests. Construct Validity: Woodcock (1978) conducted cluster analysis studies of items forming each of the subtests and subtests forming each of the W-J clusters. Results of these analyses indicated more similarity within subtests and clusters than between them, although there was some similarity across certain tests for particular age groups. Predictive Validity: Woodcock (1978) also reports evidence for the validity of the battery in predicting end-of-first grade achievement. W-J cognitive ability scores were obtained at the end of kindergarten for 42 subjects and at the beginning of grade one for 73 subjects. The correlations between the W-J cognitive ability scores and their subsequent W-J achievement scores at the end of first grade ranged from .52 to .67 for reading and .44 to .60 for mathematics.

COMMENT: The reading and mathematics subtests and subtest clusters of the W-J battery appear to have a moderate to high degree of reliability and concurrent validity. The advantages of the W-J reading and achievement cluster scores lie in the multiple aspects of achievement assessed and included in determining the scores. The subtests are also short and easy to administer. The table for determining "cluster difference" scores also is a useful aspect of the instrument.

TITLE: Preschool Inventory (1970)

AUTHOR: B. M. Caldwell

PUBLISHER: Addison-Wesley, Menlo Park, California

AGE RANGE: 3-6 years of age

DESCRIPTION: The Preschool Inventory (PSI) was designed to be a brief assessment of young children's achievement in areas regarded as necessary for school success. The following performance areas were considered in PSI item selection: basic information and vocabulary; number concepts and ordination; concepts of size, shape, motion, and color; concepts of time, object class, and social functions; visual-motor performance; following instructions; and independence and self help. The current revision of the PSI (1970) contains 64 items to be individually administered to the child. All items are scored as either correct (1 point) or incorrect (0 points). No distinction is made between a wrong answer and no answer. The child's score on the PSI is the total number of correct responses he makes. Four subscale scores can also be obtained: personal-social responsiveness, associative vocabulary, concept activation-numerical, and concept activation-sensory.

STANDARDIZATION: Two standardization samples have been used in developing the PSI, referred to as the original and the revised standardization samples. The original standardization sample was composed of 389 children ages 4-6 to 6-5, involved in Head Start (1965) programs in New York City, Baltimore, Chicago, Los Angeles, an Indian reservation in North Dakota, rural children in Mississippi, and children in Syracuse. The revised standardization sample was composed of 1531 children ages 3-0 to 6-5, in over 150 Head Start classes throughout the United States. This sample had an equal mix of boys and girls who represented at least five major ethnic groups. Regional and national norms for the PSI were generated from this sample and are reported in the manual.

RELIABILITY: The original Inventory was made up of 161 items and yielded a split-half reliability coefficient (Spearman-Brown correction) of .97. A shortened version, made up of 85 items, revealed a correlation of .98 with the original version. Split-half reliability for the shortened version was .95. The Inventory was further shortened to 64 items without lowering its reliability. The standard error of measurement for the current PSI (1970) ranged from 3.1 (ages 5-6 to 6-5) to 3.9 (ages 4-6 to 4-11). Regional studies of the PSI with children from Arizona and North Carolina supported the reliability of the PSI. Coefficients ranged from .60 to .95 across SES and age groups.

VALIDITY: Construct Validity: The author reported on the relationship between PSI and Stanford-Binet Intelligence Scale scores for 1476 children in the revised standardization sample. Correlations ranged from .39 for 3-year-olds to .65 for 5-year-olds, with a correlation of .44 for the entire sample. Caldwell noted that with only 42% of the variance in Stanford-Binet scores accounted for by the PSI, the PSI appeared to be measuring something in addition to general intelligence. The author also reported on the extent to which the PSI differentiated children of high and low achievement in the revised standardization sample. Point biserial correlations of each item with the total PSI score for each of five age groups indicated that the PSI had adequate discriminatory power (.45 to .56).

COMMENT: The PSI appears to have adequate reliability for young children of different ages, sex, region, and ethnic group. Reported validity studies are limited. The PSI appears to be at least as adequate as other available measures and is easier and quicker to administer.

TITLE: California Preschool Social Competency Scale (1969)

AUTHORS: S. Levine, F. F. Elzey, and M. Lewis

PUBLISHER: Consulting Psychologists Press, Palo Alto, California

AGE RANGE: Ages 2 years, 6 months to 5 years, 6 months

DESCRIPTION: The California Preschool Social Competency Scale (CPSCS) was developed to evaluate the social functioning of preschool children. The scale consists of 30 items representing a wide range of critical social skills, such as response to routine, response to the unfamiliar, following directions, making explanations, sharing, helping others, reaction to frustration, and accepting limits. Each item contains four descriptive statements that represent varying degrees of competence relative to the behavior measured by the item (4=most competent; 1=least competent). The total number of points is the child's social competency score. Ratings are to be based on cumulative observations of the child in his preschool or nursery school environment.

STANDARDIZATION: The CPSCS was standardized on a sample of 800 children approximately representing the proportion of preschool children in the major urban centers for each geographic region of the United States. In each of four age groups (2-6 to 5-6), there were 50 males and 50 females from families of low occupational level, and 50 males and 50 females of high occupational level. Separate norms (percentiles) were established for each of the four age groups by sex and occupational level and are reported in the manual.

RELIABILITY: The authors reported the results of three reliability studies conducted in Texas, Minnesota, and California. The reliability coefficients of independent raters in each of the studies ranged from .75 to .86. Odd-even reliability coefficients were also computed by age, sex, and occupational level and ranged from .90 to .98 (Spearman-Brown correction). Reliability estimates of internal consistency were comparable across the four age groups. Over 80% of the items showed correlations of .50 or above with the total score.

VALIDITY: No validity information was provided by the authors.

COMMENT: Although lacking information on its validity, the CPSCS is one of the few preschool measures available for assessing the social competence of young children. The CPSCS stands in contrast to most other behavior rating scales by focusing on children's competencies rather than their behavior deficits or problems. The established reliability and face validity of the scale suggests its usefulness for assessing young children's social skills. It is noteworthy that the CPSCS was developed from the Cain-Levine Social Competency Scale, a frequently used measure of an individual's social competency.

TITLE: Kansas Reflection-Impulsivity Scale for Preschoolers (1971)

AUTHOR: J. C. Wirght

PUBLISHER: Central Midwestern Regional Educational Laboratory, St. Ann, Missouri

AGE RANGE: Ages 2-6 years

DESCRIPTION: The Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP) was developed as an easier task modeled on the Matching Familiar Figures Test (MFFT), and designed for younger children. It consists of five practice and ten test items on each of two forms (A and B). Each item presents a standard line drawing of a common object, together with four to six similar alternatives, only one of which is the exact duplicate of the standard figure. The child is asked to find and point to the one exact copy in the array, and latency to first response and number of errors are recorded. Directions for administering the KRISP include standard prompts to be used when younger children forget or fail to follow the instructions. Children are allowed three errors on any item before advancing to the next item.

STANDARDIZATION: The KRISP was developed on children from 18 samples, studied by investigators in the U.S., England, and Australia (Wright, 1978). A total of 1,408 children were drawn from widely varying geographical, ethnic, residential, and SES groups. The standardization sample included 722 females and 686 males, ranging in age from 2 years, 5 months, to 6 years, 8 months. For purposes of normative analysis children were grouped into four intervals by age: 2-5 to 3-6; 3-7 to 4-6; 4-7 to 5-6; and 5-7 to 6-8. Means and standard deviations for KRISP errors and latency by age, sex, type of community, type of setting, and estimated income group are given in Wright (1978).

RELIABILITY: From the standardization sample a total of 495 children were tested twice on the KRISP, at intervals ranging from one to eight weeks. Overall from the first testing to the second there was a significant increase in latency and a significant decrease in errors. Test-retest reliability was .581 for latencies and .746 for errors. The author noted that these were for the majority alternate form reliability estimates. Approximately half (N=261) of the children were given form A then B, and the remaining half (N=238) were tested with form B, then A. There were no significant main effects of form or interactions involving form on latency or errors. Agreement between the two forms was good for errors (.72) and fair for latencies (.59).

VALIDITY: Concurrent Validity: Schlecter and Salkind (1977) examined 5- to 7-year-olds performance of the MFFT and the KRISP and found significant inter-test correlations for errors and latency between the measures. Construct Validity: The author reported evidence of KRISP validity as the degree to which children working on it display a tendency to choose between speed and accuracy as a matter of strategic choice. The degree to which children show a trade-off between speed and accuracy has been used as an indicator of the degree to which a set to choose them has been established in the testing session. The numerical indicator of this strategic trade-off is the magnitude of the negative correlation between speed and accuracy. Latency-by-errors correlations for preschoolers in the standardization sample were highly significant. Further support of the construct validity of the KRISP is shown by is relationship to other relevant variables such as attention span in free play, distractibility in the preschool setting, motor impulse control, and teacher behavior ratings (McClanahan, 1975). McCluskey and Wright (1975) examined visual scanning behavior and KRISP scores and found reflective children were more systematic scanners and visually fixed more information portions of stimuli than did impulsive children. Wright (1974) found reflectives ahead of impulsives in the development of visual strategies. Siegel, Kirasic, and Kilburg (1973) found differences in memory for visual details between KRISP-designated reflectives and impulsives. Sussman, Huston-Stein, and Friedrich-Cofer (1977) found KRISP-designated reflectives higher than impulsives on both aggressive and prosocial behavior.

COMMENT: The KRISP appears to have adequate reliability and validity for use as a research tool in assessing reflection-impulsivity in younger children.

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TABLE Y – AVERAGE GRADE PLACEMENT FOR AGE *

YRS-MOS	AVERAGE GRADE PLACEMENT
5-1	0.0
5-2	0.1
5-3	0.2
5-4	0.3
5-5	0.3
5-6	0.3
5-7	0.4
5-8	0.4
5-9	0.5
5-10	0.5
5-11	0.6
6-0	0.7
6-1	0.8
6-2	1.0
6-3	1.1
6-4	1.2
6-5	1.3
6-6	1.3
6-7	1.4
6-8	1.4
6-9	1.4
6-10	1.5
6-11	1.5
7-0	1.6
7-1	1.8
7-2	1.9
7-3	2.0
7-4	2.1
7-5	2.2
7-6	2.2
7-7	2.3
7-8	2.3
7-9	2.4
7-10	2.4
7-11	2.5
8-0	2.6
8-1	2.8
8-2	2.9
8-3	3.0
8-4	3.1
8-5	3.1
8-6	3.2
8-7	3.3
8-8	3.3
8-9	3.4
8-10	3.4
8-11	3.5
9-0	3.6
9-1	3.7
9-2	3.8
9-3	3.9
9-4	4.0
9-5	4.1
9-6	4.2
9-7	4.3
9-8	4.3
9-9	4.4
9-10	4.4
9-11	4.5
10-0	4.6
10-1	4.7
10-2	4.8
10-3	4.9
10-4	5.0
10-5	5.1
10-6	5.2
10-7	5.3
10-8	5.3
10-9	5.4
10-10	5.4
10-11	5.5
11-0	5.5
11-1	5.6
11-2	5.7
11-3	5.8
11-4	5.9
11-5	6.0
11-6	6.1
11-7	6.2
11-8	6.2
11-9	6.3
11-10	6.3
11-11	6.4
12-0	6.5
12-1	6.7
12-2	6.8
12-3	6.8
12-4	6.9
12-5	7.0
12-6	7.1
12-7	7.2
12-8	7.2
12-9	7.3
12-10	7.3
12-11	7.4
13-0	7.5
13-1	7.7
13-2	7.8
13-3	7.9
13-4	8.0
13-5	8.1
13-6	8.2
13-7	8.2
13-8	8.2
13-9	8.3
13-10	8.3
13-11	8.4
14-0	8.5
14-1	8.6
14-2	8.7
14-3	8.8
14-4	8.9
14-5	9.0
14-6	9.1
14-7	9.1
14-8	9.2
14-9	9.3
14-10	9.3
14-11	9.4
15-0	9.5
15-1	9.6
15-2	9.7
15-3	9.8
15-4	9.9
15-5	10.0
15-6	10.1
15-7	10.2
15-8	10.2
15-9	10.3
15-10	10.4
15-11	10.4
16-0	10.5
16-1	10.6
16-2	10.7
16-3	10.8
16-4	11.0
16-5	11.1
16-6	11.2
16-7	11.2
16-8	11.3
16-9	11.4
16-10	11.5
16-11	11.6
17-0	11.8
17-1	11.9
17-2	12.0
17-3	12.1
17-4	12.2
17-5	12.3
17-6	12.4
17-7	12.5
17-8	12.6
17-9	12.7
17-10	12.8
17-11	12.9

*Woodcock, R. W., & Johnson, M. B. Woodcock-Johnson Psycho-educational Battery. Hingham, MA: Teaching Resources, 1977, p. 408.

APPENDIX O:

PARENTAL RIGHTS RELATED TO CHILD PARTICIPATION

PARENTAL RIGHTS

IT IS VERY IMPORTANT THAT YOU ARE AWARE OF AND UNDERSTAND THAT YOU HAVE THE FOLLOWING RIGHTS:

1. To review the procedures and instruments to be used in interviewing and testing each child.
2. To be fully informed of the results of the interviewing and testing.
3. To withdraw your child from project participation at any time.

CONFIDENTIALITY OF STUDENT RECORDS

Only qualified school personnel who have a legitimate educational interest are eligible to review a student's records.

No school records will be released to nonschool personnel without written parent permission.

A record of inspection sheet is in each child's file and must be signed prior to reviewing the record.